

Appendix D

Operation & Maintenance

Operation and Maintenance Plan

This document presents the operation and maintenance (O&M) plan for Western Area Power Administration's (Western) Sierra Nevada Region (SNR) transmission line systems.

D.1 Inspection/System Management

In compliance with Western's Reliability Centered Maintenance Program, Western would conduct aerial, ground, and climbing inspections of its existing transmission infrastructure since initial construction. The following paragraphs describe Western's inspection requirements.

Aerial Inspections

Aerial inspections would be conducted a minimum of every 6 months by helicopter or small plane over the entire transmission system to check for hazard trees¹ or encroaching vegetation, as well as to locate damaged or malfunctioning transmission equipment. Typically, aerial patrols would be flown between 50 and 300 feet above Western's transmission infrastructure depending on the land use, topography, and infrastructure requirements. In general, the aerial inspections would pass over each segment of the transmission line within a one-minute period.

Ground Inspections

Annual ground inspections would check access to the towers/poles, tree clearances, fences, gates, locks, and tower hardware, and ensure that each structure would be readily accessible in the event of an emergency. They would allow for the inspection of hardware that would not be possible by air, and identify redundant or overgrown access roads that should be permanently closed and returned to their natural state. Ground inspections would typically be conducted by driving a pickup truck along the ROW and access roads. Detailed ground inspections would be performed on 20 percent of all lines and structures annually, for 100 percent inspection every 5 years. Ground inspections would involve a shake test, which includes manually shaking the knee braces of the tower to see if there is anything loose on the structure.

Climbing Inspections

Climbing inspections would be performed on all antenna towers at least once every 7 years to identify deterioration in hardware that could not be detected from either ground or aerial patrols. In addition, climbing of transmission line structures would occur if problems were identified during ground inspections. Typically, such activities would involve the use of a pickup truck or bucket truck.

D.2 Maintenance Activities

In general, Western O&M activities for Sierra Nevada Region transmission line systems would include the following:

- **Vegetation maintenance (transmission line and access road ROWs).** Vegetation maintenance would ensure that vegetation did not interfere with human safety, transmission line conductors, towers, other hardware, or impede access to the transmission line for maintenance crews. In general, vegetation maintenance could be performed using a variety of methods including manual methods

¹ Trees located within or adjacent to the easement or permit area that present an immediate hazard to the facility or have the potential to encroach within the safe distance to the conductor as a result of bending, growing, swinging, or falling toward the conductor.

(hand-controlled, powered, or non-powered tools such as chainsaws and clippers), mechanical methods (such as heavy-duty mowers), and herbicidal applications (used either to prohibit or retard vegetative growth).

- **Access road maintenance.** Access road maintenance would include activities to ensure that legal access roads were in appropriate condition for all-weather access to transmission lines by maintenance and inspection crews. These activities would include grading, surfacing, erosion-control measures, and constructing water diversions such as culverts, ditches, and water bars.
- **Transmission line and associated structure, hardware, and equipment maintenance.** This category of activities would include equipment and system maintenance and upgrades, routine aerial and ground patrols of transmission lines and ROWs, and transmission system repairs.

The methods used to complete maintenance activities would be selected in consultation with the appropriate land managers.

D.2.1 Vegetation Maintenance

Western's Integrated Vegetation Management (IVM) program identifies the correct vegetation maintenance approach (also referred to as prescription) for specific areas based on the sensitivity of resources, reliability and safety issues, and environmental laws and regulations. Western's intent is to secure and maintain a manageable and stable ROW that minimizes vegetative threats to transmission system safety, security and reliability, and ultimately does not require frequent re-treatments. Achieving this desired condition is a process that may take several iterations over an extended period of time. The desired condition serves as the guide for future vegetation management decisions and treatment activities. Once achieved, it is intended that the desired condition will be proactively maintained. Western also encourages landowners and governmental entities to manage lands adjacent to the ROW in a manner which further reduces vegetation and wildfire hazards which are a threat to the safe, secure, and reliable operation of the power facility. Western's desired condition, on and adjacent to its ROW and fee lands is consistent with ANSI A300 Part 7, which may be used for additional guidance and reference, and is characterized by:

- Stable, compatible plant communities free from noxious or invasive plants. Compatible plant communities will typically be comprised of native plant species, which, at a mature height, will not interfere with the safety, security, and reliability of the transmission system. Western's goal is to manage vegetation for the exclusion of incompatible plant species and the retention and recruitment of compatible species
- Vegetation managed to reduce wildfire risk and enhance wildfire survivability. The density of vegetation after treatment and areas of regeneration will be managed to reduce the overall fire risk. Vegetation debris from intensive or repetitive treatments may also require mitigation to reduce wildfire risk and enhance the survivability of the transmission facility.
- Adequate access routes to provide for efficient and cost effective vegetation treatment activities.

Western will manage undesirable vegetation in which action clearance thresholds are established and proactively monitored. For those areas that are in violation of the threshold, all possible control options are evaluated, selected, and implemented. Control options are based on worker and public safety, environmental impact, effectiveness, site characteristics, and economics. Initially, the ROW is restored through the removal of undesirable vegetation. The ROW is then enhanced via various management techniques to protect facilities, reduce the potential for fire, and provide habitat for wildlife and a variety of plant species.

Western would implement a combination of vegetation management practices that are consistent with the principles of IVM and in concert with land owner goals and policies. Western would develop specific prescriptions to manage vegetation along the ROWs. The following paragraphs describe the general vegetation management methodologies.

Manual Vegetation Control Methods

Manual vegetation control is defined as the application of powered and non-powered handheld tools or installation of synthetic or natural barriers to manage vegetative growth. The primary benefit of manual methods is selectivity; only unwanted or target vegetation is removed, while non-target vegetation is not disturbed. The primary disadvantages of manual methods are that they are labor intensive and they are only effective in vegetation with relatively low density. The manual vegetation control techniques currently employed by Western are described below.

Cutting

The most commonly used manual method to control vegetation is cutting target plants with power saws. Other manually operated tools such as axes, machetes, and clippers may also be used. This method is highly effective on species that do not resprout. For species that resprout, including most deciduous trees, sprouts may resurge to original heights within several years and at much greater density than the original stems. Access for subsequent manual treatments is thereby hindered.

Girdling

Girdling involves manually cutting away bark and cambium tissues around the trunk of target trees. This treatment is rarely practiced by Western, but could be appropriate in some cases (e.g., where large trees cannot be felled by cutting). Conifer species are killed by girdling, but hardwoods frequently will resprout below the girdle unless the cut is treated with herbicide. Girdling results in standing dead trees or snags, which are left to decompose and fall on their own. Snags are left at the land owner's request and provide habitat for cavity-nesting species and other wildlife. Girdling could pose a fuels-management problem by mixing standing dead fuel with live fuel, which could significantly increase the potential for a crown fire.

Topping and Trimming

Topping involves cutting a tree at a specific height to prevent it from growing into transmission lines or microwave beam paths without felling the whole tree. This treatment is used in rare cases by Western as the situation dictates. Trimming or pruning is the removal of selected branches from tree trunks for the same purposes. Directional pruning is practiced by Western, whereby the trees are pruned to direct growth away from the conductors. Western uses these highly labor-intensive techniques in special situations where it is desirable to leave trees in place as visual screens (e.g., along roads, streams, and rivers) or where easement contracts and land/resource plans dictate such tree removal or trimming criteria (e.g., in orchards and along streams) (Western 2007).

Under the buffered vegetation management approach, limbing or trimming of the individual branches that encroach into the buffered vegetation area would be the preferred method. Within the buffered vegetation management area, topping would not be acceptable because it could encourage faster growth in an undesirable direction.

Slash Disposal/Fuels Reduction

Manual cutting operations by Western are sometimes followed by slash disposal techniques designed to reduce fire hazards or to improve aesthetic appeal. Slash refers to the debris left within the vegetation treatment area. Depending on land-owner preference, access limitations, and fire safety, the slash can be treated by one of the following methods: it can be chipped and left on site; burned in piles; removed from the site; or lopped and scattered. Western acknowledges land manager concerns related to fuels left in the ROW and would reduce fuel load during vegetation management activities, to the extent feasible.

Mechanical Vegetation Control Methods

Mechanical methods employ machines to remove or control vegetation. These methods are often nonselective in that certain plants cannot be either targeted for removal or avoided. Mechanical methods, however, may be highly effective at controlling brush on gentle topography with few site obstacles. Most pieces of mechanical equipment are not safe to operate on slopes over 30 to 35 percent; mechanical methods are also constrained where soils are susceptible to compaction or erosion. Site obstacles such as rocks, stumps, or logs also reduce efficiency of these methods (Western 2007). Western would use mechanical methods to remove vegetation in portions of the ROW.

Herbicide Control Methods

Western would coordinate with land managers and local agencies to ensure that its use of herbicides would be consistent with local regulations and guidelines.

An herbicide is a chemical used to kill or suppress the growth of nonnative or invasive plants. The most satisfactory classification of herbicides is based upon how they are used for noxious-weed control and how they work. Accordingly, herbicides are classified into two major types:

- Selective herbicides kill certain plants but do not significantly affect the most desirable plants. For example, some selective herbicides kill broadleaf plants (including brush) but do not affect grasses.
- Nonselective herbicides are chemicals that are generally toxic to plants without regard to species.
- Plants differ in susceptibility to any specific chemical, and the choice of herbicide and application rate depends on the species to be controlled.

Western proposes using only those herbicides that have been approved for use in ROW maintenance based on evaluations of toxicity, solubility, soil adsorption potential, and persistence in water and soil. Further, these herbicides must be registered for use in California by the U.S. Environmental Protection Agency. Western would use only employees or contractors with required applicator licenses/certificates.

Western would follow strict safety procedures and best management practices (BMPs) while applying herbicides. These practices, described in Western's IVM Program (Western 2007), are a part of the Master O&M Program and would include:

- Reviewing federal and California pesticide regulations for restrictions on use of particular herbicides;
- Reviewing interagency agreements for herbicide type or application method restrictions;
- Using herbicides approved by the respective land management agency;
- Observing site conditions to match specific herbicides and application methods to those conditions, including the plants that are to be controlled, seasonal limitations, presence of sensitive environmental areas (such as listed and/or sensitive species, habitat, and wetlands), presence/proximity of non-target vegetation, presence/proximity of crops, and vegetation conditions (such as height and amount of tall-growing brush);

- Following all restrictions and guidance listed on the herbicide label;
- Calibrating equipment to ensure proper mixture and volume of herbicide;
- Selecting the proper nozzle tip to avoid overspray;
- Handling herbicides carefully to avoid accidental spills and ensure worker and public safety;
- Adjusting herbicide application methods and equipment based on wind speed and direction, which could include avoiding application on windy days when drift potential exceeds that which is recommended on the label;
- Providing the land owner and/or appropriate agency with the following information after completion of a particular activity: herbicide used, amount (including concentration), location of application, and method and date of application.

There are several different ways to apply herbicides, and the method selected depends on the type of control needed, the type of vegetation, and the site situation (i.e., site conditions, location). Application methods Western would use include stump treatment, basal spray treatment, foliage spray treatment, soils treatment, and under-surfacing materials treatment.

Stump Treatment

Western currently applies either an oil-based herbicide mixture or a ready-to-use non-oil solution. This type of treatment is used when vegetation is cut to the ground. This method is primarily used after initial clearing and during maintenance clearing when trees have grown too tall to use foliage spray or when drift is an issue. As needed, cut surfaces of stumps would be treated with registered borax fungicide (e.g. Sporangin) soon after the tree is felled.

Basal Spray Treatment

This treatment method involves spraying the lower part of the stem and the exposed roots of incompatible vegetation with an oil-based formula. Basal spray treatment would be used on resprouting species and nonnative and invasive plant species. This method is more selective than a foliage spray and does not cause immediate brownout of vegetation. In general, this treatment is prescribed where:

- brush is too tall to use foliage spray without causing unacceptable drift;
- the ROW is adjacent to cropland, residences, susceptible vegetation, or other sensitive areas, and drift is a problem;
- the ROW contains a high density of compatible species, and a foliage spray cannot be applied without injuring the compatible cover.

Foliar Spray Treatment

Foliar spraying is a common method of applying herbicides on brush up to 15 feet tall. This method uses a water-based formulation that is applied to the entire plant's foliage and stems. Because it is sprayed into the air, drift can be a problem under certain atmospheric conditions. Also, most foliage sprays cause immediate brownout of vegetation. This method would not be used in areas where drift and brownout are concerns (e.g., adjacent to cropland, residences, susceptible vegetation, or other environmentally or visually sensitive areas).

Documentation and Reporting

Per federal regulations, Western would document and report information pertaining to herbicide application within the ROW and associated facilities. This information could include herbicide type, quantity, and application area. Reporting format and frequency would be decided in coordination with the appropriate land manager.

D.2.2 Access Road Maintenance

As part of the O&M program, Western must maintain safe and reliable access roads to the existing infrastructure. Western would notify land managers before work begins and would comply with applicable specifications, as required. Western would also take into account land-manager guidelines. In addition, land managers would be notified when work was completed so that they have an opportunity to inspect the work.

For all access road work, any equipment will be cleaned and inspected prior to operations. All ditches, existing culverts, and inlet assemblies will be cleaned. Slash and debris may be scattered, but will not be placed near or in stream channels, culvert inlets, or ditches. There will be a clearing limit of 4 feet on both sides of the existing roadbed. Trees over 6 inches in diameter within the clearing limit that do not impede blading will be limbed to a height of 14 feet and left standing.

The following paragraphs describe Western's general approach to maintaining its existing legal access roads.

Clearing Culverts and Ditches

Existing culverts and ditches would be kept free of debris and obstructions. Ditches on newly constructed roads could require frequent cleaning and checking after each major storm until revegetation has occurred. Additionally, it would be Western's goal to check each culvert at least once a year after spring rains and before winter rains; additional culvert checks will be performed as needed to keep culverts clean and unobstructed. During inspection and clearing of culverts and ditches, Western would:

- leave grass in the ditch unless it had filled with sediment and were no longer functioning;
- check for undercutting road shoulders and banks;
- check culverts for blockage by debris;
- not leave a berm on the side of the road; as berms would channel water down the road.

Culvert and Ditch Design

Culverts

Culverts would be made of corrugated metal or corrugated steel. Western would clear an area 10 feet upstream and 10 feet downstream of a culvert, with a width 2 feet wider than the diameter of the culvert.

- Western understands the potential for adverse environmental effects if a culvert is installed without consideration of existing biological resources. As such, Western would consider the following guidelines when constructing new culverts:
 - Whenever possible, low-water crossings would be installed instead of a culvert;
 - Applicable permits (including national regulatory permits for wetlands and state water-quality certification) would be obtained as appropriate;

- Projects would be scheduled so that they did not coincide with fish migrations, spawning, and egg-incubation periods;
- The appropriate erosion and sediment controls would be installed on disturbed soils as soon as possible (i.e., before site work was finished) consistent with the terms and conditions of all applicable permits.

Culverts would be large enough to pass a 100-year flood at 67 to 75 percent of capacity. They would be designed to accommodate water velocities and flows necessary for fish, frogs, and other aquatic species to swim through the culvert. Culvert diameters would match the width of the stream at an average point. Stream widths would be measured at the top of the banks to best represent the stream size during normal high water or bank-full conditions. The angle or slope of the culvert would be equal to the stream grade to maintain an acceptable water velocity for fish passage.

Water Bars

A water bar is a ridge that directs water off the road. Water bars would be spaced 200 feet apart for roads with a grade under 6 percent, 125 feet apart for grades between 6 and 10 percent, and 50 feet apart for grades between 10 and 13 percent.

Rolling Drain Dips

A rolling drain dip allows for cross-drainage. It consists of a shallow dip followed by a hump, along with an earth berm at the edge of one side of the road.

Removing Slide Debris

Slide debris can cause increased sediment loads in established roadway drainage systems as well as in established streams. In order to prevent this, Western would not sidecast removed material. Should slide debris occur, the cause would be evaluated to determine if removal of the slide debris could exacerbate slope instability by undercutting the toe of the slope. In some instances, removal of some debris could be required and stabilization of the remaining material could prevent further problems. The appropriate erosion and sediment controls would be installed on disturbed soils as soon as possible (i.e., before site work was finished). Mulching and other forms of erosion control would be used to prevent erosion.

Repairing Road Structures

In order to maintain safe access, associated road structures would be routinely inspected and maintained. Road structures in need of repair could include bridges, culverts, cattle guards, and fences. Should a structure need to be modified, maintenance activities would be designed to reduce erosion and sedimentation in streams. Western would employ the following BMPs:

- Be consistent with applicable specifications of the appropriate land manager;
- Protect vegetation and minimize the amount of disturbance of plants and soils by equipment;
- Work quickly to minimize the time disturbed soils are exposed;
- Divert runoff away from exposed soils into vegetated buffers;
- Disperse concentrated stream flows;
- Provide adequate runoff channels;
- Trim slopes to stable configurations and revegetate as soon as possible;

- Comply with land manager design and engineering requirements for new or modified structures;
- Inspect new or modified structures at least once a year after spring rains and before winter rains;
- Mitigate the damage created during emergency road repairs as soon as possible to prevent further damage and erosion.

Controlling Erosion

Western would work with guidance from each land manager to review and annually prioritize roads for repair over a 5 year period. This would involve monitoring for erosion, rehabilitating gullies and rills, and ensuring that there are no ruts deeper than 3 inches.

Repairing Damaged Access Roads

For damaged access roads or roads with existing drainage and erosion problems, Western would replace the surface material lost or worn away, then grade and shape the road surface, turnouts, and shoulders to their original condition, or better. Watering could be required to control dust and to retain fine surface rock.

This program would make it a goal to eliminate old erosional features while proactively preventing new problems. While repairing damaged access roads, it would be Western's goal to adhere to the following BMPs:

- Be consistent with applicable specifications of the appropriate land manager;
- Minimize the amount of disturbance to plants and soils by equipment;
- Work quickly to minimize the time disturbed soils are exposed;
- Divert runoff away from exposed soils and into vegetated areas;
- Disperse concentrated stream flows;
- Provide adequate runoff channels;
- Trim slopes to stable configurations and revegetate as soon as possible;
- Check road quality at least once a year after spring rains and before winter rains;
- Mitigate any damage created by emergency repairs as soon as possible to prevent further damage and erosion.

Removing Access Roads

Western would consider removing access roads that are no longer needed. Western would annually prioritize roads for removal and provide land-management agencies with a plan to restore the abandoned roads to a natural state over a 5- to 6-year period.

D.2.3 Transmission System Maintenance

The need for repairs and preventative maintenance would be based on the results of inspections or other reports. Repairs and preventative maintenance could include: replacing insulators; tightening, replacing, or repairing towers/poles or hardware; and looking for ROW encroachments. These activities would be performed wherever damage or deterioration of transmission lines or facilities pose a threat to safety or reliability. The type of equipment needed could include a pickup truck, bulldozer, backhoe, bucket truck, and hand tools, and would depend on the required repair or maintenance. For major activities, Western would coordinate with the land manager.

D.3 Equipment/System Upgrades

For the transmission system to operate in a safe, reliable, and efficient manner, Western would replace or upgrade system components based on the age, condition, and technology of the equipment. System upgrades or replacements could include new conductors, capacitor banks, transformers and breakers, small solar-power arrays, and other electrical equipment.

D.4 Regulatory Coordination

Western would coordinate with resource agencies and land managers on major facilities maintenance and vegetation removal activities. The following bullets describe the process and reporting requirements that Western would follow for category A, B, and C maintenance activities (section 1.4 provides a description of the O&M activity categories).

- **Identification of maintenance activity.** Western is required to conduct aerial and ground inspections of its lines on a periodic basis. During inspections, Western would identify problem areas or equipment. These maintenance projects would be prioritized based on public and worker safety, system reliability, protection of the environment, and funding. Section 1.3.1 describes the frequency of each type of maintenance activity.
- **Coordination with resource agencies and land managers.** Western would coordinate with the appropriate resource agencies and land managers for each major maintenance project, providing a description of the maintenance task and coordinating with them regarding measures.
- **Training of Western personnel or contractors.** Western would train its maintenance personnel on SOPs and other measures on an annual basis. Should a contractor be hired to conduct a particular task, Western would train the contractor prior to project startup. All SOPs would be incorporated into the contractor's master contract. Western personnel and contractors would be responsible for complying with measures.
- **Monitor maintenance activity.** Western's personnel would monitor maintenance activities to make sure that the contractor was complying with the applicable SOPs and other measures. Western would also conduct follow-up inspections of the ground-disturbance activity sites.

D.4.1 Standard Operating Procedures

SOPs would be followed for every O&M activity, regardless of the activity category, throughout the Proposed Action. All Western O&M personnel would be subject to an annual training that includes SOPs, environmental laws and regulations, and applicable agency requirements. SOPs would be included as part of the contract with any contractor selected to conduct O&M activities. Prior to conducting the O&M activity, Western's O&M personnel would review the SOPs with the selected contractor to make sure the intent and background of each procedure was clearly understood. In addition, Western's O&M personnel would monitor the contractor during maintenance activities, and conduct follow-up inspections of the job site at periodic intervals after the work had been completed.

D.4.2 Projected O&M Frequency

Western would continue periodic aerial and ground patrols of the transmission lines and towers. Aerial inspections would be performed a minimum of every 6 months by flying a helicopter at 50 to 300 feet above the conductors. Ground patrols would be conducted semi-annually using a pickup truck to drive along lines. During either type of patrol, problems could be identified that may require immediate repair

or replacement of transmission line hardware or vegetation management. Typically, equipment repair or replacement would be conducted by a four-person crew with two or three trucks, a boom line truck, and an aerial and assist truck. Western would also conduct periodic climbing inspections of antenna towers.

Western would also monitor vegetation clearance and access roads along the ROWs. Western would prioritize those areas that needed maintenance according to public and worker safety, transmission reliability, environmental protection, and funding.

D.5 Operation and Maintenance Activity Categories

The following is a list of the O&M activities according to their associated activity category. Note that substation and facility maintenance activities are restricted to the confines of the existing fenced substation or facility perimeter.

- Category A – Inspection and Minor Maintenance Activities
- Category B – Routine Maintenance Activities
- Category C – New Infrastructure

D.5.1 Category A – Inspection and Minor Maintenance Activities

Maintenance activities in Category A are primarily inspection-type actions, with some minor repairs that would cause minimal, if any, soil disturbance. Typical activities under Category A may include but would not be limited to:

Substation Maintenance

- Maintenance and replacement of transformers and breakers
- Servicing and testing of equipment at existing substations, including oil change-outs
- Installation or replacement of bushings
- Cleaning or replacement of capacitor banks
- Maintenance or installation of propane tanks within a substation yard
- Maintenance of switches, voltage regulators, reactors, tap changes, reclosers, and valves
- Replacement of wiring in substations and switchyards
- Replacement of existing substation equipment including regulators, capacitors, switches, wave traps, radiators, and lightning arresters
- Installation of cut-out fuses
- Adjustment and cleaning of disconnect switches
- Placement of temporary transformers
- Maintenance, installation, and removal of solar power arrays and controllers
- Installation of foundation for storage buildings above ground mat within existing substation yard
- New footings
- Ground mat repairs
- Remediation of small spill of oil and hazardous materials (less than 1 gallon)
- Clearing vegetation by hand within the property boundary of a fenced substation
- Application of soil sterilants and herbicides within the property boundary of a fenced substation
- Maintenance or installation of oil containment structures

Transmission Line Maintenance

- Ground and aerial patrols
- Ground wire maintenance
- Aircraft warning device maintenance
- Insulator maintenance
- Bird guard maintenance
- Cross arms maintenance on wood pole structures
- Emergency manual removal and/or pruning of danger trees or vegetation
- Steel members of steel transmission line structures
- Hardware on wood and steel transmission line structures
- X brace and knee brace maintenance
- Dampener maintenance
- Ground rod maintenance
- Armor rod maintenance and clipping-in structures
- Conductor upgrade/maintenance
- Emergency placement of rocks at bases of poles or structures to stabilize small eroded areas
- Remediation of small spill of oil and hazardous materials (less than 1 gallon)
- Antennae maintenance
- Structure mile marker maintenance
- Ground spike maintenance on wood pole structures
- Conductor upgrade, replacement, and/or maintenance
- Overhead ground-wire (OHGW) upgrade, replacement, and/or maintenance
- Wood preservative maintenance on wooden pole structures
- Routine minor erosion prevention at bases of poles or structures
- Emergency minor erosion control at bases of poles or structures to stabilize

Communication System

- Microwave radio tower maintenance
- Communication tower and antennae maintenance
- Light beacon maintenance
- Microwave dish maintenance
- Parabolic dish maintenance
- Periodic antenna tower climbing inspections
- Maintenance or installation of propane tanks

Facilities Maintenance

- Building maintenance including interior and exterior painting; and roof, ceiling, floor, window, and door maintenance
- Clearing vegetation by hand within the property boundary of fenced maintenance facilities
- Application of soil sterilants and herbicides within the property boundary of fenced maintenance facility

D.5.2 Category B – Routine Maintenance Activities

Maintenance activities in Category B include some of the typical repair tasks that would occur along Western's existing ROW. Category B actions have the potential to cause minimal effects to sensitive resources. Category B maintenance equipment may include, but would not be limited to, rubber-tired vehicles such as bucket trucks, backhoes, front-end loaders, cranes, auger trucks, bobcats, and pole trucks. Typical activities under Category B may include but would not be limited to:

Transmission Line Maintenance

- Maintenance and repair of existing culverts
- Removal of soil deposition around tower legs
- Ground anchors maintenance
- Filling of erosional features on access roads
- Remediation of small spill of oil and hazardous materials (between 1 and 10 gallons)
- Grading existing access roads
- Application of herbicides
- Placement of fill or rock(s) around existing culverts
- Placement of fill or rock(s) around existing towers or structures
- Wood pole maintenance
- Maintenance, grading and repair of existing access roads to approved standards
- Remediation of erosional features on access roads, and sources or causes of the erosion
- Remediation of small spills
- Installation or replacement of underground and overhead power, communication, fiber optics, ground wire, or ground electrical line (less than 100 feet)
- Installation or replacement of power, communication, fiber optics, OHGW, or electrical line over water features (less than 100 feet)
- Vehicle and equipment staging
- Installation and repair of fences and gates
- Installation or replacement of underground and overhead power, communication, or ground electrical line (less than 100 feet)
- Manual removal and/or pruning of danger trees or vegetation
- Mechanical vegetation management by means of masticators or other similar mechanical equipment
- Installation of minor rip-rap on creeks and rivers

Communication System Maintenance

- Foundations or footings maintenance
- Installation of underground and overhead power, communication, or ground electrical line (less than 100 feet)
- Installation of cellular equipment onto existing infrastructure
- Installation of underground and overhead power, communication, fiber optics, ground wire, or ground electrical line (less than 100 feet)
- Installation or replacement of power, communication, fiber optics, OHGW, or electrical line over water features (less than 100 feet)
- Installation of equipment on existing towers
- Maintenance and repair of existing access roads
- Maintenance and repair of existing culverts
- Remediation of small spill of oil and hazardous materials (between 1 and 10 gallons)
- Application of soil sterilants and herbicides

D.5.3 Category C – New Infrastructure

Category C tasks are generally those maintenance activities that would disturb large areas and would utilize heavy equipment. Category C maintenance equipment may include, but would not be limited to, the use of steel-tracked and/or rubber-tired bulldozers, graders, backhoes, and front-end loaders. Typical activities under Category C may include but would not be limited to:

Transmission Line and Communication System Maintenance

- Adding new access roads within and outside of existing road easement
- Installation of new culverts
- Installation of new foundation for storage building at existing facilities
- Erosion-control projects at existing facilities
- Reconductoring
- Mechanical vegetation management by means of bulldozers or other similar mechanical equipment
- Installation or replacement of underground and overhead power, communication, fiber optics, or ground electrical line (greater than 100 feet)
- Installation or replacement of power, communication, fiber optics, or electrical line over water features (greater than 100 feet)
- Tower/pole relocation/realignment within existing ROW
- Installation or replacement of underground and overhead power, communication, or ground electrical line (greater than 100 feet)
- Remediation of a small spill of oil and hazardous materials (greater than 10 gallons)

Appendix E

Disturbance Assumptions

SLTP Disturbance Assumptions

These disturbance calculations represent best estimates of temporary and permanent ground disturbance based on available information. These estimates are subject to change pending final engineering of the Proposed Project and alternative corridors. We anticipate that final disturbance acreages will reasonably match these calculated estimates.

North Segment

- 500-kV – 5 towers/mile (rounded to the nearest whole number) @ 0.9 acre temporary disturbance (200 feet x 200 feet) and 0.1 acre permanent disturbance.
- Existing public or private roads or two track trails would be used as much as possible to access the corridor and road repair or improvement would be as necessary. For disturbance calculations, we estimated the following miles and disturbance acres for roads:

North Segment	Units	Existing Roads	New Roads	
		Dirt, gravel, or 2-track trails	Temporary	Permanent
Proposed Corridor	Miles	20.0	5.0	3.0
	Acreage	34.0	8.0	4.0

- 1 pulling site every 3 miles @ 2.0 acres (600 feet x 150 feet) of disturbance at each pulling site.
- Material storage sites every 15 miles, depending on needs, @ 5 acres each (one storage site for this section).
- One new substation @ up to 50 acres.

Central Segment

- 500-kV – 5 towers/mile (rounded to the nearest whole number) @ 0.9 acre temporary disturbance (200 feet x 200 feet) and 0.1 acre permanent disturbance.
- Existing public or private roads or two track trails would be used as much as possible to access the corridor and road repair or improvement would be as necessary. For disturbance calculations, we estimated the following miles and disturbance acres for roads:

Central Segment	Units	Existing Roads	New Roads	
		Dirt, gravel, or 2-track trails	Temporary	Permanent
Proposed Corridor	Miles	125.0	2.0	20.0
	Acreage	225.0	3.0	36.0
Patterson Pass Road Alternative Corridor	Miles	130.0	2.0	29.0
	Acreages	233.0	3.0	51.0

- 1 pulling site every 3 miles @ 2.0 acres (600 feet x 150 feet) of disturbance at each pulling site.
- Material storage sites every 15 miles, depending on needs, @ 5 acres each (three storage site for this section).

San Luis Segment

- 500-kV – 5 towers/mile (rounded to the nearest whole number) @ 0.9 acre temporary disturbance (200 feet x 200 feet) and 0.1 acre permanent disturbance.
- Existing public or private roads or two track trails would be used as much as possible to access the corridor and road repair or improvement would be as necessary. For disturbance calculations, we estimated the following miles and disturbance acres for roads:

San Luis Segment	Units	Existing Roads	New Roads	
		Dirt, gravel, or 2-track trails	Temporary	Permanent
Proposed Corridor	Miles	16.0	0.0	4.0
	Acreage	28.0	0.0	6.0
Butts Road Alternative Corridor	Miles	15.0	0.0	6.0
	Acreage	25.0	0.0	10.0
West of Cemetery Alternative Corridor	Miles	34	0.0	13
	Acreages	57	0.0	20

- 1 pulling site every 3 miles @ 2.0 acres (600 feet x 150 feet) of disturbance at each pulling site.
- Material storage sites every 15 miles, depending on needs, @ 5 acres each (one storage site for this section).
- One new substation @ up to 50 acres.

San Luis Segment (70-kV Routes)

- 15 towers/mile (rounded to the nearest whole number) @ 0.115 acre temporary disturbance (50 feet easement width x 100 feet long) and 0.0001 acre permanent disturbance (5 feet x 5 feet)
- Existing roads or two track trails would be used as much as possible to access the corridor and road repair or improvement would be as necessary. A new 50-foot spur road @ 20 feet wide would be constructed for each tower. The spur roads would be maintained at 12 feet wide after completion of tower construction
- 1 pulling site every 3 miles @ 2.0 acres (600 feet x 150 feet) of disturbance at each pulling site.
- Material storage sites every 15 miles, depending on needs, @ 5 acres each (no storage sites for this section, as this section would share the storage site for the Butts Road to San Luis Substation section)

South Segment

- 230-kV – 5 towers/mile (rounded to the nearest whole number) @ 0.6 acre temporary disturbance (200 feet x 125 feet) and 0.1 acre permanent disturbance.
- Existing public or private roads or two track trails would be used as much as possible to access the corridor and road repair or improvement would be as necessary. For disturbance calculations, we estimated the following miles and disturbance acres for roads:

South Segment	Units	Existing Roads	New Roads	
		Dirt, gravel, or 2-track trails	Temporary	Permanent
Proposed Corridor	Miles	40.0	2.0	7.0
	Acreage	70.0	4.0	13.0
San Luis to Dos Amigos Alternative Corridor	Miles	40	2.0	7.0
	Acreage	70	4.0	13.0
Billy Wright Road Alternative	Miles	32.0	0.0	10.0
	Acreages	56.0	0.0	16.0

- 1 pulling site every 3 miles @ 2.0 acres (600 feet x 150 feet) of disturbance at each pulling site.
- Material storage sites every 15 miles, depending on needs, @ 5 acres each (one storage site for this section).
- It is assumed that there would be double-circuit towers/poles between San Luis and Los Banos substations for approximately 3 miles. The double-circuit towers/poles would support the 230-kV tie-line between San Luis and Los Banos substations, as well as a portion of the San Luis/Dos Amigos 230-kV circuit that would be located between San Luis Substation and a point near the Los Banos Substation.

Sources

Barren Ridge Renewable Transmission Project. Appendix C: Detailed Construction, Operation, and Maintenance Process; POWER Engineers, Inc.

Gateway West Transmission Line Project. Appendix B: Transmission Line and Substation Components Common to All Action Alternatives; BLM.

Sacramento Area Voltage Support Project. Appendix B: Alternatives Comparison; Western and SMUD.

Southwest Intertie Project Construction, Operation and Maintenance Plan. Section 3: Project Components; BLM and Western.

This page intentionally blank.

Corridor	Voltage	Total Miles	Disturbance Estimates by Project Component															
			New Structures			Existing Roads		New Roads				Pulling Sites		Material Storage		New Substations	Total Temporary Acres	Total Permanent Acres
						Dirt, gravel or 2-track										Permanent (Acres)		
			Number	Temporary Acres	Permanent Acres	Miles	Permanent (acres)	Temporary (miles)	Temporary (acres)	Permanent (miles)	Permanent (acres)	Number	Temporary Acres	Number	Temporary Acres	Permanent (Acres)		
	North Segment																	
Proposed Project	500-kV	7.7	39	35.1	3.9	20.0	34.0	5.0	8.0	3.0	4.0	3	6	1	5.0	50.0	54.1	91.9
	Central Segment																	
Proposed Project	500-kV	48.0	240	216.0	24.0	125.0	225.0	2.0	3.0	20.0	36.0	16	32	3	15.0	0.0	266.0	285.0
Patterson Pass Road Alternative	500-kV	48.0	240	216.0	24.0	130.0	233.0	2.0	3.0	29.0	51.0	16	32	3	15.0	0.0	266.0	308.0
	San Luis Segment																	
Proposed Project	500-kV	9.1	46	41.4	4.6	16.0	28.0	0.0	0.0	4.0	6.0	3	6	1	5.0	50.0	52.4	88.6
Butts Road Alternative	500-kV	9.6	48	43.2	4.8	15.0	25.0	0.0	0.0	6.0	10.0	3	6	1	5.0	50.0	54.2	89.8
West of Cemetery Alternative	500-kV	10.3	52	46.8	5.2	34.0	57.0	0.0	0.0	13.0	20.0	3	6	1	5.0	50.0	57.8	132.2
	San Luis Segment – 70-kV																	
Proposed Project	N/A	7.0	105	12.1	0.01	0.0	0.0	1.0	2.4	1.0	1.4	2	4.0	1	5.0	0.0	23.5	1.4
West of O'Neill Forebay Alternative	N/A	7.0	105	12.1	0.01	0.0	0.0	1.0	2.4	1.0	1.4	2	4.0	1	5.0	0.0	23.5	1.4
	South Segment																	
Proposed Project	N/A	18.0	90	54.0	9.0	40.0	70.0	2.0	4.0	7.0	13.0	6	12	1	5.0	0.0	75.0	92.0
San Luis to Dos Amigos	N/A	18.0	90	54.0	9.0	40.0	70.0	2.0	4.0	7.0	13.0	6	12	1	5.0	0.0	75.0	92.0
Billy Wright Road	N/A	19.5	98	58.8	9.8	32.0	56.0	0.0	0.0	10.0	16.0	7	14	1	5.0	0.0	77.8	81.8

Appendix F

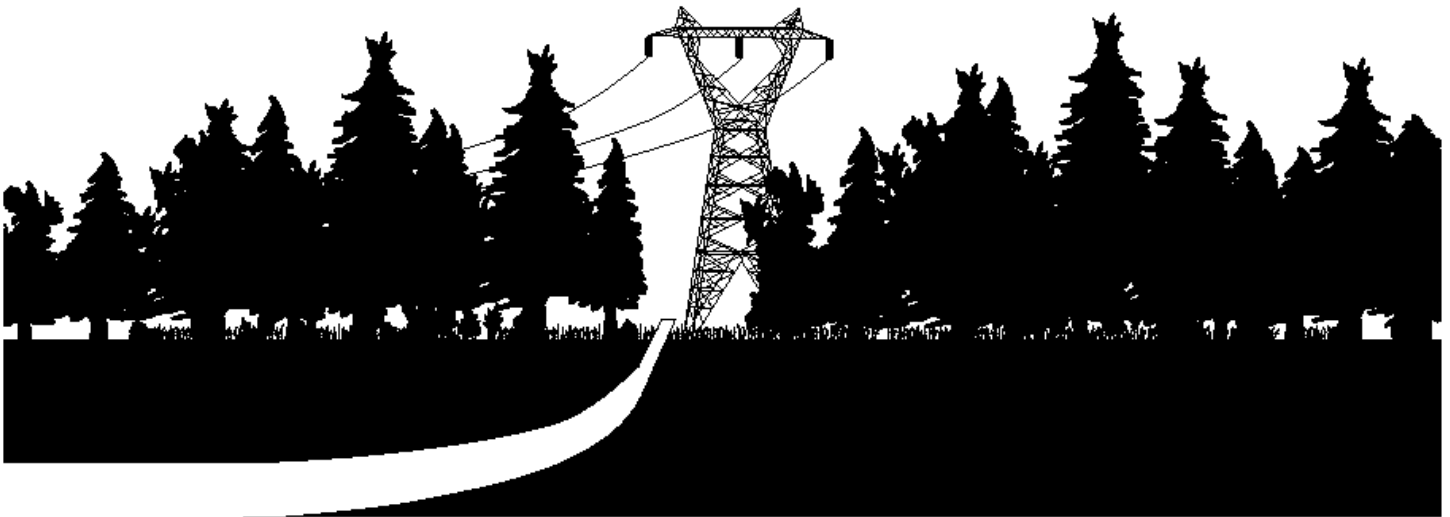
Construction Standards



CONSTRUCTION STANDARDS

STANDARD 13

ENVIRONMENTAL QUALITY PROTECTION



September 2013



STANDARD 13 - ENVIRONMENTAL QUALITY PROTECTION

TABLE OF CONTENTS

	Page Number
SECTION 13.1—REQUIRED SUBMITTALS, REPORTS, AND PLANS.....	13-5
SECTION 13.2--CONTRACTOR FURNISHED DATA	13-5
1. RECYCLED MATERIALS QUANTITY REPORT	13-5
2. RECOVERED AND BIOBASED MATERIAL PRODUCTS REPORT	13-5
3. RECLAIMED REFRIGERANT RECEIPT	13-5
4. WASTE MATERIAL QUANTITY REPORT:.....	13-5
5. SPILL PREVENTION NOTIFICATION AND CLEANUP PLAN (Plan)	13-5
6. TANKER OIL SPILL PREVENTION AND RESPONSE PLAN.....	13-5
7. PESTICIDE USE PLAN	13-5
8. TREATED WOOD UTILITY POLES AND CROSSARMS RECYCLING - CONSUMER INFORMATION RECEIPT	13-6
9. PREVENTION OF AIR POLLUTION	13-6
10. ASBESTOS LICENSES OR CERTIFICATIONS	13-6
11. LEAD PAINT NOTICES	13-6
12. WATER POLLUTION PERMITS	13-6
13. PCB TEST REPORT	13-6
14. OIL AND OIL-FILLED ELECTRICAL EQUIPMENT RECEIPT	13-6
15. OSHA PCB TRAINING RECORDS.....	13-6
16. CLEANUP WORK MANAGEMENT PLAN	13-6
17. POST CLEANUP REPORT	13-6
SECTION 13.3--ENVIRONMENTAL REQUIREMENTS	13-6
SECTION 13.4--LANDSCAPE PRESERVATION.....	13-6
1. GENERAL.....	13-6
2. CONSTRUCTION ROADS	13-6
3. CONSTRUCTION FACILITIES.....	13-7
SECTION 13.5--PRESERVATION OF CULTURAL AND PALEONTOLOGICAL RESOURCES	13-7
1. GENERAL.....	13-7
2. KNOWN CULTURAL OR PALEONTOLOGICAL SITES.....	13-7
3. UNKNOWN CULTURAL OR PALEONTOLOGICAL SITES.....	13-7
SECTION 13.6--NOXIOUS WEED CONTROL	13-8
SECTION 13.7--RECYCLED MATERIALS QUANTITIES	13-8
1. GENERAL.....	13-8
2. RECYCLED MATERIAL QUANTITY REPORT	13-8
SECTION 13.8-- USE OF RECOVERED AND BIOBASED MATERIAL PRODUCTS	13-8
1. RECOVERED MATERIAL PRODUCTS.....	13-8
2. BIOBASED MATERIAL PRODUCTS	13-9
3. RECOVERED AND BIOBASED MATERIAL PRODUCTS REPORT	13-9
SECTION 13.9--DISPOSAL OF WASTE MATERIAL	13-9
1. GENERAL.....	13-9
2. HAZARDOUS, UNIVERSAL, AND NON-HAZARDOUS WASTES.....	13-9

STANDARD 13 - ENVIRONMENTAL QUALITY PROTECTION

3. USED OIL	13-9
4. RECYCLABLE MATERIAL	13-9
5. REFRIGERANTS AND RECEIPTS	13-9
6. HALONS	13-10
7. SULFUR HEXAFLUORIDE (SF6)	13-10
8. WASTE MATERIAL QUANTITY REPORT	13-10
SECTION 13.10--CONTRACTOR'S LIABILITY FOR REGULATED MATERIAL INCIDENTS	13-10
1. GENERAL	13-10
2. SUPERVISION	13-10
SECTION 13.11--POLLUTANT SPILL PREVENTION, NOTIFICATION, AND CLEANUP	13-10
1. GENERAL	13-10
2. SPILL PREVENTION NOTIFICATION AND CLEANUP PLAN (Plan)	13-10
3. TANKER OIL SPILL PREVENTION AND RESPONSE PLAN	13-11
SECTION 13.12--PESTICIDES	13-11
1. GENERAL	13-11
2. ENVIRONMENTAL PROTECTION AGENCY REGISTRATION	13-11
3. PESTICIDE USE PLAN	13-11
SECTION 13.13--TREATED WOOD UTILITY POLES AND CROSSARMS RECYCLING OR DISPOSAL	13-11
SECTION 13.14--PREVENTION OF AIR POLLUTION	13-12
1. GENERAL	13-12
2. MACHINERY AIR EMISSIONS	13-12
3. DUST ABATEMENT	13-12
SECTION 13.15--HANDLING AND MANAGEMENT OF ASBESTOS CONTAINING MATERIAL	13-12
1. GENERAL	13-12
2. TRANSPORTATION OF ASBESTOS WASTE	13-12
3. CERTIFICATES OF DISPOSAL AND RECEIPTS	13-12
SECTION 13.16--MATERIAL WITH LEAD-BASED PAINT	13-12
1. GENERAL	13-12
2. TRANSFER OF PROPERTY	13-12
3. CERTIFICATES OF DISPOSAL AND RECEIPTS	13-12
SECTION 13.7--PREVENTION OF WATER POLLUTION	13-13
1. GENERAL	13-13
2. PERMITS	13-13
3. EXCAVATED MATERIAL AND OTHER CONTAMINANT SOURCES	13-13
4. MANAGEMENT OF WASTE CONCRETE OR WASHING OF CONCRETE TRUCKS	13-13
5. STREAM CROSSINGS	13-13
SECTION 13.18--TESTING, DRAINING, REMOVAL, AND DISPOSAL OF OIL-FILLED ELECTRICAL EQUIPMENT	13-13
1. SAMPLING AND TESTING OF INSULATING OIL FOR PCB CONTENT	13-13
2. PCB TEST REPORT	13-13
3. OIL CONTAINING PCB	13-14
4. REMOVAL AND DISPOSAL OF INSULATING OIL AND OIL-FILLED ELECTRICAL EQUIPMENT	13-14
5. OIL AND OIL-FILLED ELECTRICAL EQUIPMENT RECEIPT	13-14

STANDARD 13 - ENVIRONMENTAL QUALITY PROTECTION

SECTION 13.19--REMOVAL OF OIL-CONTAMINATED MATERIAL	13-14
1. GENERAL.....	13-14
2. CLEANUP WORK MANAGEMENT PLAN	13-14
3. EXCAVATION AND CLEANUP	13-14
4. TEMPORARY STOCKPILING.....	13-14
5. SAMPLING AND TESTING	13-14
6. TRANSPORTION AND DISPOSAL OF CONTAMINATED MATERIAL	13-15
7. POST CLEANUP REPORT	13-15
 SECTION 13.20—CONSERVATION OF NATURAL RESOURCES	 13-15
1. GENERAL.....	13-15
2. KNOWN OCCURRENCE OF PROTECTED SPECIES OR HABITAT	13-15
3. UNKNOWN OCCURRENCE OF PROTECTED SPECIES OR HABITAT	13-15

STANDARD 13 - ENVIRONMENTAL QUALITY PROTECTION

SECTION 13.1—REQUIRED SUBMITTALS, REPORTS, AND PLANS

1. FINAL PAYMENT: For each section below, final payment may be withheld until the referenced submittal, report, or plan is received.

SECTION 13.2--CONTRACTOR FURNISHED DATA

1. RECYCLED MATERIALS QUANTITY REPORT: Submit quantities of recycled materials listed in Section 13.7, "Recycled Materials Quantities", to the COR prior to submittal of final invoice.
2. RECOVERED AND BIOBASED MATERIAL PRODUCTS REPORT: Provide the COR the following information for purchases of items listed in Section 13.8, "Use of Recovered and Biobased Material Products".
 - (1) Quantity and cost of listed items with recovered or biobased material content and quantity and cost of listed items without recovered or biobased material content prior to submittal of final invoice.
 - (2) Written justification of listed items if recovered material or biobased material products are not available: 1) competitively within a reasonable time frame; 2) meeting reasonable performance standards as defined in the Standards or Project Specifications; or 3) at a reasonable price.
3. RECLAIMED REFRIGERANT RECEIPT: A receipt from the reclaimer stating that the refrigerant was reclaimed, the amount and type of refrigerant, and the date shall be submitted to the COR prior to submittal of final invoice in accordance with Section 13.9.5, "Refrigerants and Receipts".
4. WASTE MATERIAL QUANTITY REPORT: Submit quantities of total project waste material disposal as listed below to the COR prior to submittal of final invoice in accordance with Section 13.9.8, "Waste Material Quantity Report".
 - (1) Unregulated Wastes (i.e., trash): Volume in cubic yards or weight in pounds.
 - (2) Hazardous or Universal Wastes: Weight in pounds.
 - (3) PCB Wastes: Weight in pounds.
 - (4) Other regulated wastes (e.g., lead-based paint or asbestos): Weight in pounds (specify type of waste in report).
5. SPILL PREVENTION NOTIFICATION AND CLEANUP PLAN (Plan): Submit the Plan as described in Section 13.11.2, "Spill Prevention Notification and Cleanup Plan", to the COR for review and comment 14 days prior to start of work. Review of the plan is for the purpose of determining compliance with the specifications only and shall not relieve the Contractor of the responsibility for compliance with all Federal, State, and Local regulations.
6. TANKER OIL SPILL PREVENTION AND RESPONSE PLAN: Submit the Plan as described in Section 13.11.3, "Tanker Oil Spill Prevention and Response Plan", to the COR for review and comment 14 days prior to start of work. Review of the plan is for the purpose of determining compliance with the specifications only and shall not relieve the Contractor of the responsibility for compliance with all Federal, State, and Local regulations.
7. PESTICIDE USE PLAN: Submit a plan as described in Section 13.12.3, "Pesticide Use Plan", to the COR for review and comment 14 days prior to the date of intended pesticide application. Review of

STANDARD 13 - ENVIRONMENTAL QUALITY PROTECTION

the plan is for the purpose of determining compliance with the specifications only and shall not relieve the Contractor of the responsibility for compliance with all Federal, State, and Local regulations. Within seven days after application, submit a written report in accordance with Standard 2 – Sitework, Section 2.1.1_5, “Soil-Applied Herbicide”.

8. **TREATED WOOD UTILITY POLES AND CROSSARMS RECYCLING - CONSUMER INFORMATION SHEET RECEIPT:** Submit treated wood utility poles and crossarms - consumer information sheet receipts to the COR prior to submittal of final invoice (see 13.13, “Treated Wood Utility Poles and Crossarms Recycling or Disposal”).
9. **PREVENTION OF AIR POLLUTION:** Submit a copy of permits, if required, as described in 13.14, “Prevention of Air Pollution” to the COR 14 days prior to the start of work.
10. **ASBESTOS LICENSES OR CERTIFICATIONS:** Submit a copy of licenses, certifications, Demolition and Renovation Notifications and Permits for asbestos work as described in 13.15, “Handling and Management of Asbestos Containing Material” to the COR 14 days prior to starting work. Submit copies of certificates of disposal and/or receipts for waste to the COR prior to submittal of final invoice.
11. **LEAD PAINT NOTICES:** Submit a copy of lead paint notices with contractor and recipient signatures as described in 13.16, “Material with Lead-based Paint” to the COR prior to submittal of final invoice. Submit copies of certificates of disposal and/or receipts for waste to the COR prior to submittal of final invoice.
12. **WATER POLLUTION PERMITS:** Submit copies of any water pollution permits as described in 13.17, “Prevention of Water Pollution” to the COR 14 days prior to start of work.
13. **PCB TEST REPORT:** Submit a PCB test report as described in 13.18, “Testing, Draining, Removal, and Disposal of Oil-filled Electrical Equipment”, prior to draining, removal, or disposal of oil or oil-filled equipment that is designated for disposal.
14. **OIL AND OIL-FILLED ELECTRICAL EQUIPMENT RECEIPT:** Obtain and submit a receipt for oil and oil-filled equipment transported and disposed, recycled, or reprocessed as described in 13.19, “Testing, Draining, Removal, and Disposal of Oil-filled Electrical Equipment”, to the COR prior to submittal of final invoice.
15. **OSHA PCB TRAINING RECORDS:** Submit employee training documentation records to the COR 14 days prior to the start of work as described in 13.19.1.
16. **CLEANUP WORK MANAGEMENT PLAN:** Submit a Cleanup Work Management Plan as described in 13.19, “Removal of Oil-contaminated Material” to the COR for review and comment 14 days prior to the start of work. Review of the plan is for the purpose of determining compliance with the specifications only and shall not relieve the Contractor of the responsibility for compliance with all Federal, State, and Local regulations.
17. **POST CLEANUP REPORT:** Submit a Post-Cleanup Report as described in 13.19, “Removal of Oil-contaminated Material” to the COR prior to submittal of final invoice.

SECTION 13.3--ENVIRONMENTAL REQUIREMENTS

Comply with Federal, State, and local environmental laws and regulations. The sections in this Standard further specify the requirements.

STANDARD 13 - ENVIRONMENTAL QUALITY PROTECTION

SECTION 13.4--LANDSCAPE PRESERVATION

1. **GENERAL:** Preserve landscape features in accordance with the contract clause titled "Protection of Existing Vegetation, Structures, Equipment, Utilities, and Improvements."
2. **CONSTRUCTION ROADS:** Location, alignment, and grade of construction roads shall be subject to the COR's approval. When no longer required, surfaces of construction roads shall be scarified to facilitate natural revegetation, provide for proper drainage, and prevent erosion. If re-vegetation is required, use seed mixtures as recommended by Natural Resources Conservation Service or other land managing agency as appropriate.
3. **CONSTRUCTION FACILITIES:** Shop, office, and yard areas shall be located and arranged in a manner to preserve trees and vegetation to the maximum practicable extent and prevent impact on sensitive riparian areas and flood plains. Storage and construction buildings, including concrete footings and slabs, shall be removed from the site prior to contract completion. The area shall be re-graded as required so that all surfaces drain naturally, blend with the natural terrain, and are left in a condition that will facilitate natural revegetation, provide for proper drainage, and prevent erosion or transport of sediment and pollutants. If re-vegetation is required, use seed mixtures as recommended by Natural Resources Conservation Service or other land managing agency as appropriate.

SECTION 13.5--PRESERVATION OF CULTURAL AND PALEONTOLOGICAL RESOURCES

1. **GENERAL:** Do not, at any time, remove, disturb, or otherwise alter cultural artifacts or paleontological resources (fossils). Cultural artifacts may be of scientific or cultural importance and includes, but are not limited to bones, pottery, projectile points (arrowheads), other stone or metal tools, surface features (stone circles, rock piles, etc.), glass, metal, ceramic, or other historic objects, structures and buildings (including ruins). Paleontological resources can be of scientific importance and include mineralized animals and plants or trace fossils such as footprints. Both cultural and paleontological resources are protected by Federal Regulations during Federal construction projects. Contractor shall restrict all ground disturbing activities to areas that have been investigated by Western for cultural or paleontological resources, or have been cleared in writing by the Regional Preservation Officer (RPO) and as specified in accordance with Standard 1 – General Requirements, Sections 1.3.1 Rights-of-way and 1.3.2 Access to the Work and Haul Routes.
2. **KNOWN CULTURAL OR PALEONTOLOGICAL SITES:** Following issuance of notice to proceed, Western will provide drawings or maps showing sensitive areas located on or immediately adjacent to the transmission line right-of-way and/or facility. These areas shall be considered avoidance areas. Prior to any construction activity, the avoidance areas shall be marked on the ground in a manner approved by the COR in conjunction with the RPO. Instruct employees and subcontractors that vehicular or equipment access to these areas is prohibited. If access is absolutely necessary, first obtain approval from the COR in conjunction with the RPO. Western will remove the markings during or following final cleanup. For some project work, Western will require an archaeological, paleontological or tribal monitor at or near cultural or paleontological site locations. The contractor, contractor's employees, and subcontractors shall work with the monitor to insure that sensitive areas are avoided. Where monitors are required, the monitor shall meet with the crew each morning to go over the day's work. The monitor will also conduct awareness training for all contractors prior to any work in the field. Untrained personnel shall not be allowed in the construction area. For sensitive areas requiring a monitor, the contractor may not access those areas without a monitor being present.

STANDARD 13 - ENVIRONMENTAL QUALITY PROTECTION

3. UNKNOWN CULTURAL OR PALEONTOLOGICAL SITES: On rare occasions cultural or paleontological sites may be discovered during excavation or other earth-moving or other construction activities.
 - (1) Reporting: If evidence of a cultural or paleontological site is discovered, cease work in the area immediately and notify the COR of the location and nature of the findings. If a monitor is present, the monitor should also be notified. Stop all activities within a 200-foot radius of the discovery and do not proceed with work within that radius until directed to do so by the COR.
 - (2) Care of Evidence: Protect the area. Do not remove, handle, alter, or damage artifacts or fossils uncovered during construction activities.

SECTION 13.6--NOXIOUS WEED CONTROL

Comply with Federal, State, and local noxious weed control regulations. Provide a "clean vehicle policy" while entering and leaving construction areas to prevent transport of noxious weed plants and/or seed. Transport only construction vehicles that are free of mud and vegetation debris to staging areas and the project right-of-way.

SECTION 13.7--RECYCLED MATERIALS QUANTITIES

1. GENERAL: All materials generated from the project that can be recycled, shall be recycled. Record quantities of material by category that is salvaged, recycled, reused, or reprocessed, including:
 - (1) Transformers, Breakers: Weight without oil.
 - (2) Aluminum Conductor – Steel Reinforced (ACSR): Weight in pounds or tons.
 - (3) Steel: Weight in pounds or tons.
 - (4) Aluminum: Weight in pounds or tons.
 - (5) Copper: Weight in pounds or tons.
 - (6) Other Metals: Weight in pounds or tons.
 - (7) Oil: Gallons (separate by type - less than 2 ppm PCB, 2 to 50 ppm PCB, and 50 or greater ppm PCB).
 - (8) Gravel, Asphalt, Or Concrete: Weight in pounds or tons.
 - (9) Batteries: Weight in pounds.
 - (10) Treated Wood Utility Poles and Crossarms: Weight in pounds.
 - (11) Wood construction material: Weight in pounds.
 - (12) Cardboard: Weight in pounds.
 - (13) Porcelain Insulators: Weight in pounds.
2. RECYCLED MATERIAL QUANTITY REPORT: Submit quantities (pounds or metric tons) of all recycled material by category to the COR within 30 days of recycling and prior to submittal of final invoice.

STANDARD 13 - ENVIRONMENTAL QUALITY PROTECTION

SECTION 13.8--USE OF RECOVERED MATERIAL AND BIOBASED MATERIAL PRODUCTS

1. **RECOVERED MATERIAL PRODUCTS:** If the products listed below or other products listed at <http://www.epa.gov/epawaste/conserve/tools/cpg/products/index.htm> are obtained as part of this project, purchase the items with the highest recovered material content possible unless recovered material products are not available: 1) competitively within a reasonable time frame; 2) meeting reasonable performance standards as defined in the Standards or Project Specifications; or 3) at a reasonable price.

Construction Products:

- Building Insulation Products
- Carpet
- Carpet cushion
- Cement and concrete containing coal fly ash, ground granulated blast furnace slag, cenospheres, or silica fume
- Consolidated and reprocessed latex paint
- Floor Tiles
- Flowable fill
- Laminated Paperboard
- Modular threshold ramps
- Nonpressure pipe
- Patio Blocks
- Railroad grade crossing surfaces
- Roofing materials
- Shower and restroom dividers/partitions
- Signage
- Structural Fiberboard

2. **BIOBASED MATERIAL PRODUCTS:** If the products listed at <http://www.biobased.oce.usda.gov> are obtained as part of this project, purchase the items with the highest biobased content possible and no less than the percent indicated for each product unless biobased material products are not available: 1) competitively within a reasonable time frame, 2) meeting reasonable performance standards as defined in the Standards or Project Specifications, or 3) at a reasonable price.

NOTE: All station service and pole mounted transformers will be bio-based oil. Western exempts purchase of bio-based large transformers rated above 5 MVA until May 13, 2015. Large transformers will be evaluated on a best value basis using life cycle cost analysis.

3. **RECOVERED MATERIAL AND BIOBASED MATERIAL PRODUCTS REPORT:** Provide the COR the following information for purchases of those items listed above:

Quantity and cost of listed items with recovered or biobased material content and quantity and cost of listed items without recovered or biobased material content prior to submittal of final invoice.

Written justification of listed items if recovered material or biobased material products are not available: 1) competitively within a reasonable time frame; 2) meeting reasonable performance standards as defined in the Standards or Project Specifications; or 3) at a reasonable price.

SECTION 13.8--DISPOSAL OF WASTE MATERIAL

1. **GENERAL:** Dispose or recycle waste material in accordance with applicable Federal, State and local regulations and ordinances. In addition to the requirements of the Contract Clause "Cleaning

STANDARD 13 - ENVIRONMENTAL QUALITY PROTECTION

Up”, remove all waste material from the construction site. No waste shall be left on Western property, right-of-way, or easement. Burning or burying of waste material is not permitted.

2. **HAZARDOUS, UNIVERSAL, AND NON-HAZARDOUS WASTES:** Manage hazardous, universal, and non-hazardous wastes in accordance with State and Federal regulations.
3. **USED OIL:** Used oil generated from the Contractor activities shall be managed in accordance with used oil regulations.
4. **RECYCLABLE MATERIAL:** Reduce wastes, including excess Western material, by recycling, reusing, or reprocessing. Examples of recycling, reusing, or reprocessing includes, but is not limited to, reprocessing of solvents; recycling cardboard; and salvaging scrap metals.
5. **REFRIGERANTS AND RECEIPTS:** Refrigerants from air conditioners, water coolers, refrigerators, ice machines and vehicles shall be reclaimed with certified equipment operated by certified technicians if the item is to be disposed. Refrigerants shall be reclaimed and not vented to the atmosphere. A receipt from the reclaimer stating that the refrigerant was reclaimed, the amount and type of refrigerant, and the date shall be submitted to the COR prior to submittal of final invoice.
6. **HALONS:** Equipment containing halons that must be tested, maintained, serviced, repaired, or disposed must be handled according to EPA requirements and by technicians trained according to those requirements.
7. **SULFUR HEXAFLUORIDE (SF6):** SF6 shall be reclaimed and shall not be vented to the atmosphere.
8. **WASTE MATERIAL QUANTITY REPORT:** Submit quantities of total project waste material disposal as listed below to the COR prior to submittal of final invoice.
 - (1) Unregulated Wastes (i.e., trash): Volume in cubic yards or weight in pounds.
 - (2) Hazardous or Universal Wastes: Weight in pounds.
 - (3) PCB Wastes: Weight in pounds.
 - (4) Other regulated wastes (e.g., lead-based paint or asbestos): Weight in pounds (specify type of waste in report).

SECTION 13.10--CONTRACTOR'S LIABILITY FOR REGULATED MATERIAL INCIDENTS

1. **GENERAL:** The Contractor is solely liable for all expenses related to spills, mishandling, or incidents of regulated material attributable to his actions or the actions of his subcontractors. This includes all response, investigation, cleanup, disposal, permitting, reporting, and requirements from applicable environmental regulation agencies.
2. **SUPERVISION:** The actions of the Contractor employees and subcontractors shall be properly managed at all times on Western property or while transporting Western's (or previously owned by Western) regulated material and equipment.

SECTION 13.11--POLLUTANT SPILL PREVENTION, NOTIFICATION, AND CLEANUP

1. **GENERAL:** Provide measures to prevent spills of pollutants and respond appropriately if a spill occurs. A pollutant includes any hazardous or non-hazardous substance that when spilled, will

STANDARD 13 - ENVIRONMENTAL QUALITY PROTECTION

contaminate soil, surface water, or ground water. This includes any solvent, fuel, oil, paint, pesticide, engine coolants, and similar substances.

2. **SPILL PREVENTION NOTIFICATION AND CLEANUP PLAN (Plan):** Provide the Plan to the COR for review and comment 14 days prior to start of work. Review of the plan is for the purpose of determining compliance with the specifications only and shall not relieve the Contractor of the responsibility for compliance with all Federal, State, and Local regulations. Include the following in the Plan:
 - (1) **Spill Prevention measures.** Describe the work practices or precautions that will be used at the job site to prevent spills. These may include engineered or manufactured techniques such as installation of berms around fuel and oil tanks; Storage of fuels, paints, and other substances in spill proof containers; and management techniques such as requiring workers to handle material in certain ways.
 - (2) **Notification.** Most States and the Environmental Protection Agency require by regulation, that anyone who spills certain types of pollutants in certain quantities notify them of the spill within a specific time period. Some of these agencies require written follow up reports and cleanup reports. Include in the Plan, the types of spills for which notification would be made, the agencies notified, the information the agency requires during the notification, and the telephone numbers for notification.
 - (3) **Employee Awareness Training.** Describe employee awareness training procedures that will be implemented to ensure personnel are knowledgeable about the contents of the Plan and the need for notification.
 - (4) **Commitment of Manpower, Equipment and Material.** Identify the arrangements made to respond to spills, including the commitment of manpower, equipment and material.
 - (5) **If applicable, address all requirements of 40CFR112 pertaining to Spill Prevention, Control and Countermeasures Plans.**
3. **TANKER OIL SPILL PREVENTION AND RESPONSE PLAN:** Provide a Tanker Oil Spill Prevention and Response Plan as required by the Department of Transportation if oil tankers with volume of 3,500 gallons or more are used as part of the project. Submit the Tanker Oil Spill Prevention and Response Plan to the COR for review and comment 14 days prior to start of work. Review of the plan is for the purpose of determining compliance with the specifications only and shall not relieve the Contractor of the responsibility for compliance with all Federal, State, and Local regulations.

SECTION 13.12--PESTICIDES

1. **GENERAL:** The term "pesticide" includes herbicides, insecticides, rodenticides and fungicides. Pesticides shall only be used in accordance with their labeling and applied by appropriately certified applicators.
2. **ENVIRONMENTAL PROTECTION AGENCY REGISTRATION:** Use EPA registered pesticides that are approved for the intended use.
3. **PESTICIDE USE PLAN:** Provide a pesticide use plan that contains: 1) a description of the pesticide to be used, 2) where it is to be applied, 3) the application rate, 4) a copy of the label, and 5) a copy of required applicator certifications. Submit the pesticide use plan to the COR for review and comment 14 days prior to the date of intended application. Review of the plan is for the purpose of determining compliance with the specifications only and shall not relieve the Contractor of the responsibility for compliance with all Federal, State, and Local regulations. Within seven days after

STANDARD 13 - ENVIRONMENTAL QUALITY PROTECTION

application, submit a written final report to the COR, including the pesticide applicators report, in accordance with Standard 2 – Sitework, Section 2.1.1_5. “Soil-Applied Herbicide, (4) Final Report”.

SECTION 13.13--TREATED WOOD UTILITY POLES AND CROSSARMS RECYCLING OR DISPOSAL

Whenever practicable, treated wood utility poles and crossarms removed during the project shall be recycled or transferred to the public for some uses. Treated wood utility poles and crossarms transferred to a recycler, landfill, or the public shall be accompanied by a written consumer information sheet for treated wood as provided by Western. Obtain a receipt, part of the consumer information sheet, from the recipient indicating that they have received, read, and understand the consumer information sheet. Treated wood products transferred to right-of-way landowners shall be moved off the right-of-way. Treated wood product scrap, poles, and crossarms that cannot be donated or reused shall be properly disposed in a landfill that accepts treated wood and has signed Western’s consumer information sheet receipt. Submit treated wood utility poles and crossarms consumer information receipts to the COR prior to submittal of final invoice.

SECTION 13.14--PREVENTION OF AIR POLLUTION

1. **GENERAL:** Ensure that construction activities and the operation of equipment are undertaken to reduce the emission of air pollutants. Submit a copy of permits for construction activities, if required (e.g., “non-attainment” areas, state implementation plans, or Class I air-sheds), from Federal, State, or local agencies to the COR 14 days prior to the start of work.
2. **MACHINERY AIR EMISSIONS:** The Contractor and subcontractor machinery shall have, and shall use the air emissions control devices required by Federal, State or Local Regulation or ordinance.
3. **DUST ABATEMENT:** Dust shall be controlled. Oil shall not be used as a dust suppressant. Dust suppressants shall be approved by the COR prior to use.
4. **SULFUR HEXAFLUORIDE EMISSIONS:**

- 1) **General:** The Contractor shall record quantities of SF₆, including:

Nameplate capacity in pounds of SF₆ containing equipment.

Record pounds of SF₆ stored in containers, before transferring into energized equipment.

Record pounds of SF₆ left in containers, after transferring into energized equipment.

Pounds of SF₆ purchased from equipment manufacturers or distributors.

Pounds of SF₆ returned to suppliers.

Scales used to weigh cylinders must be accurate to within +/- 2 pounds and must have current calibration sticker.

- 2) **CONTRACTOR FIELD QUALITY TESTING AND SF₆ HANDLING:**

The Contractor shall test all functions to verify correct operation and conduct a leak test. No SF₆ gas leakage shall be allowed from any equipment or storage containers.

Atmospheric venting of SF₆ gas is not allowed.

The Contractor shall remove all empty SF₆ gas cylinders and return to supplier.

STANDARD 13 - ENVIRONMENTAL QUALITY PROTECTION

(3) CERTIFICATES OF DISPOSAL AND RECEIPTS:

- 1) The Contractor can use Western's Reporting Form for reporting quantities listed above.
- 2) The Contractor shall provide receipts of SF6 gas returned to supplier.
- 3) The Contractor shall submit SF6 gas Reporting Forms and copies of receipts to the COR prior to submittal of final invoice.

SECTION 13.15--HANDLING AND MANAGEMENT OF ASBESTOS CONTAINING MATERIAL

1. **GENERAL:** Obtain the appropriate Federal, State, Tribal or local licenses or certifications prior to disturbing any regulated asbestos-containing material. If a building or portion of a building will be demolished or renovated, obtain an Asbestos Notice of and Permit for Demolition and Renovation from the State or Tribal Department of Environmental Quality, Division of Air Quality (or equivalent). The building(s) shall be inspected by a State-Certified or Tribal accepted Asbestos Building Inspector. The inspector shall certify the presence and condition of asbestos, or non-presence of asbestos, on site as directed on the State or Tribal Demolition and Renovation Notice/Permit. The inspections shall be performed and notifications shall be submitted whether asbestos is present or not. Submit a copy of licenses, certifications, Demolition and Renovation Notifications and Permits for asbestos work to the COR 14 days prior to work. Ensure: 1) worker and public safety requirements are fully implemented and 2) proper handling, transportation, and disposal of asbestos containing material.
2. **TRANSPORTATION OF ASBESTOS WASTE:** Comply with Department of Transportation, Environmental Protection Agency, and State and Local requirements when transporting asbestos wastes.
3. **CERTIFICATES OF DISPOSAL AND RECEIPTS:** Obtain certificates of disposal for waste if the waste is a hazardous waste or receipts if the waste is a non-hazardous waste. Submit copies to the COR prior to submittal of final invoice.

SECTION 13.16--MATERIAL WITH LEAD-BASED PAINT

1. **GENERAL:** Comply with all applicable Federal, State and local regulations concerning work with lead-based paint, disposal of material painted with lead-based paint, and management of these materials. OSHA and General Industry Standards apply to worker safety and right-to-know issues. Federal EPA and State agencies regulate waste disposal and air quality issues.
2. **TRANSFER OF PROPERTY:** If lead-based paint containing equipment or material is to be given away or sold for reuse, scrap, or reclaiming, the contractor shall provide a written notice to the recipient of the material stating that the material contains lead-based paint and the Hazardous Waste regulations may apply to the waste or the paint in some circumstances. The new owner must also be notified that they may be responsible for compliance with OSHA requirements if the material is to be cut, sanded, abraded, or stripped of paint. Submit a copy of lead paint notices with contractor and recipient signatures to the COR prior to submittal of final invoice.
3. **CERTIFICATES OF DISPOSAL AND RECEIPTS:** Obtain certificates of disposal for waste if the waste is a hazardous waste or receipts if the waste is a non-hazardous waste. Submit copies to the COR prior to submittal of final invoice.

STANDARD 13 - ENVIRONMENTAL QUALITY PROTECTION

SECTION 13.17--PREVENTION OF WATER POLLUTION

1. **GENERAL:** Ensure that surface and ground water is protected from pollution caused by construction activities and comply with applicable regulations and requirements. Ensure that streams, waterways and other courses are not obstructed or impaired unless the appropriate Federal, State or local permits have been obtained.
2. **PERMITS:** Ensure that:
 - (1) A National Pollutant Discharge Elimination System (NPDES) permit is obtained from the US Environmental Protection Agency or State as appropriate if the disturbed construction area equals 1 acre or more. Contractor is responsible for preparation and implementation of the associated Storm Water Pollution Prevention Plan (SWPPP). Disturbed areas include staging, parking, fueling, stockpiling, and any other construction related activities. Refer to www.epa.gov/npdes/stormwater for directions and forms.
 - (2) A dewatering permit is obtained from the appropriate agency if required for construction dewatering activities.
 - (3) Copies of permits and plans, approved by the appropriate regulating agencies, are submitted to the COR 14 days prior to start of work.
3. **EXCAVATED MATERIAL AND OTHER CONTAMINANT SOURCES:** Control runoff from excavated areas and piles of excavated material, construction material or wastes (to include truck washing and concrete wastes), and chemical products such as oil, grease, solvents, fuels, pesticides, and pole treatment compounds. Excavated material or other construction material shall not be stockpiled or deposited near or on streambanks, lake shorelines, ditches, irrigation canals, or other areas where run-off could impact the environment.
4. **MANAGEMENT OF WASTE CONCRETE OR WASHING OF CONCRETE TRUCKS:** Do not permit the washing of concrete trucks or disposal of excess concrete in any ditch, canal, stream, or other surface water. Concrete wastes shall be disposed in accordance with all Federal, State, and local regulations. Concrete wastes shall not be disposed of on any Western property, right-of-way, or easement; or on any streets, roads, or property without the owner's consent.
5. **STREAM CROSSINGS:** Crossing of any stream or other waterway shall be done in compliance with Federal, State, and local regulations. Crossing of some waterways may be prohibited by landowners, Federal or State agencies or require permits.

SECTION 13.18--TESTING, DRAINING, REMOVAL, AND DISPOSAL OF OIL-FILLED ELECTRICAL EQUIPMENT

1. **SAMPLING AND TESTING OF INSULATING OIL FOR PCB CONTENT:** Sample and analyze the oil of electrical equipment (which includes storage tanks) for PCB's. Use analytical methods approved by EPA and applicable State regulations. Decontaminate sampling equipment according to documented good laboratory practices (these can be contractor developed or EPA standards). Use only laboratories approved by Western. The COR will furnish a list of approved laboratories.
2. **PCB TEST REPORT:** Provide PCB test reports that contain the information below for disposing of oil-filled electrical equipment. Submit the PCB test report for COR approval prior to draining, removal, or disposal of oil or oil-filled equipment that is designated for disposal.
 - Name and address of the laboratory
 - Description of the electrical equipment (e.g. transformer, breaker)

STANDARD 13 - ENVIRONMENTAL QUALITY PROTECTION

- Serial number for the electrical equipment.
 - Date sampled
 - Date tested
 - PCB contents in parts per million (ppm)
 - Unique identification number of container into which the oil was drained (i.e., number of drum, tank, tanker, etc.)
3. OIL CONTAINING PCB: Comply with the Federal regulations pertaining to PCBs found at Title 40, Part 761 of the U.S. Code of Federal Regulations (40 CFR 761).
 4. REMOVAL AND DISPOSAL OF INSULATING OIL AND OIL-FILLED ELECTRICAL EQUIPMENT: Once the PCB content of the oil has been identified from laboratory results, the oil shall be transported and disposed, recycled, or reprocessed according to 40 CFR 761 (if applicable), Resource Conservation and Recovery Act (RCRA) "used oil", and other applicable regulations. Used oil may be transported only by EPA-registered used oil transporters. The oil must be stored in containers that are labeled "Used Oil." Use only transporters and disposal sites approved by Western.
 5. OIL AND OIL-FILLED ELECTRICAL EQUIPMENT RECEIPT: Obtain and submit a receipt for oil and oil-filled equipment transported and disposed, recycled, or reprocessed to the COR prior to submittal of final invoice.

SECTION 13.19--REMOVAL OF OIL-CONTAMINATED MATERIAL

1. GENERAL: Removing oil-contaminated material includes excavating, stockpiling, testing, transporting, cleaning, and disposing of these material. Personnel working with PCBs shall be trained in accordance with OSHA requirements. Submit employee training documentation records to the COR 14 days prior to the start of work.
2. CLEANUP WORK MANAGEMENT PLAN: Provide a Cleanup Work Management Plan that has been approved by applicable Federal, State, or Local environmental regulation agencies. Submit the plan to the COR for review and comment 14 days prior to the start of work. Review of the plan is for the purpose of determining compliance with the specifications only and shall not relieve the Contractor of the responsibility for compliance with all Federal, State, and Local regulations. The plan shall address on-site excavation of contaminated soil and debris and include the following:
 - Identification of contaminants and areas to be excavated
 - Method of excavation
 - Level of personnel/subcontractor training
 - Safety and health provisions
 - Sampling requirements including quality control, laboratory to be used
 - Management of excavated soils and debris
 - Disposal methods, including transportation to disposal
3. EXCAVATION AND CLEANUP: Comply with the requirements of Title 40, Part 761 of the U.S. Code of Federal Regulations (40 CFR 761).
4. TEMPORARY STOCKPILING: Excavated material, stockpiled on site during construction, shall be stored on heavy plastic and covered to prevent wind and rain erosion at a location designated by the COR.
5. SAMPLING AND TESTING: Sample contaminated debris and areas of excavation to ensure that contamination is removed. Use personnel with experience in sampling and, in particular, with

STANDARD 13 - ENVIRONMENTAL QUALITY PROTECTION

experience in PCB cleanup if PCBs are involved. Use analytical methods approved by EPA and applicable State regulations.

6. **TRANSPORTATION AND DISPOSAL OF CONTAMINATED MATERIAL:** The Contractor shall be responsible and liable for the proper loading, transportation, and disposal of contaminated material according to Federal, State, and local requirements. Use only transporters and disposal sites approved by Western.
7. **POST CLEANUP REPORT:** Provide a Post-Cleanup Report that describes the cleanup of contaminated soils and debris. Submit the report to the COR prior to submittal of final invoice. The report shall contain the following information:
 - Site map showing the areas cleaned
 - Description of the operations involved in excavating, storing, sampling, and testing, and disposal
 - Sampling and analysis results including 1) Name and address of the laboratory, 2) sample locations, 3) sample dates, 4) analysis dates, 5) contents of contaminant (e.g. PCB or total petroleum hydrocarbons) in parts per million (ppm)
 - Certification by the Contractor that the cleanup requirements were met
 - Copies of any manifests, bills of lading, and disposal certificates
 - Copies of correspondence with regulatory agencies that support completion of the cleanup

SECTION 13.20—CONSERVATION OF BIOLOGICAL RESOURCES

1. **GENERAL:** Federal law prohibits the “take” of endangered, threatened, proposed or candidate wildlife and plants, and destruction or adverse modification of designated Critical Habitat. Federal law also prohibits the “take” of birds protected by the Migratory Bird Treaty Act, and the Bald and Golden Eagle Protection Act. “Take” means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect or attempt to engage in any such conduct with a protected animal or plant or any part thereof, or attempt to do any of those things without a permit from U.S. Fish and Wildlife Service. The Contractor will take precautions to avoid harming other wildlife species. Contractor shall restrict all ground disturbing activities to areas that have been surveyed by Western for natural resources and as specified in accordance with Standard 1 – General Requirements, Sections 1.3.1 Rights-of-way and 1.3.2 Access to the Work and Haul Routes.
2. **KNOWN OCCURRENCE OF PROTECTED SPECIES OR HABITAT:** Following issuance of the notice to proceed, and prior to the start of construction, Western will provide training to all contractor and subcontractor personnel and others involved in the construction activity if there is a known occurrence of protected species or habitat in the construction area. Untrained personnel shall not be allowed in the construction area. Western will provide drawings or maps showing sensitive areas located on or immediately adjacent to the transmission line right-of-way and/or facility. These sensitive areas shall be considered avoidance areas. Prior to any construction activity, the avoidance areas shall be marked on the ground by Western. If access is absolutely necessary, the contractor shall first obtain written permission from the COR, noting that a Western and/or other Federal or state government or tribal agency biologist may be required to accompany personnel and equipment. Ground markings shall be maintained through the duration of the contract. Western will remove the markings during or following final inspection of the project.
3. **UNKNOWN OCCURRENCE OF PROTECTED SPECIES OR HABITAT:** If evidence of a protected species is found in the project area, the contractor shall immediately notify the COR and provide the location and nature of the findings. The contractor shall stop all activity within 200 feet of the protected species or habitat and not proceed until directed to do so by the COR.

Appendix G

Paleontological Resources Report



133 N. San Gabriel Blvd., Pasadena, CA

91107-3414

(626) 578-0119

September 12, 2014

Mr. Tom Murphy
Vice President
Aspen Environmental Group
8801 Folsom Blvd., Suite 290
Sacramento, CA 95826

RE: Paleontological Resource Overview of the San Luis Transmission Project, Alameda, San Joaquin, Stanislaus, and Merced Counties, California

Dear Mr. Murphy:

At your request, on behalf of Western Area Power Administration (Western), Applied EarthWorks, Inc. (Æ) has performed a preliminary assessment of the paleontological resource setting of the proposed San Luis Transmission Project (Project) within the counties of Alameda, San Joaquin, Stanislaus, and Merced. The scope of work included a museum records search and paleontologic/geologic literature review of the proposed Project area. This letter serves as a summary of our findings.

PROJECT DESCRIPTION

Western proposes to construct, own, operate, and maintain a new 500-kilovolt (kV) transmission line from the Tracy to Los Banos Substations (62 miles in length), a 70-kV transmission line between the San Luis and O'Neill Substations (5 miles), a 230-kV transmission line between the San Luis and Los Banos Substations (3 miles), and a 230-kV transmission line between the San Luis and Dos Amigos Substations (18 miles). The transmission line will be located along the eastern flank of the Diablo Range and western Central Valley, roughly parallel to Interstate 5. Western will also consider the following corridor alternatives: Patterson Pass to Horseshoe Road 500-kV line (50 miles), West of Cemetery 500-kV line (7 miles), West of O'Neill Forebay 70-kV line (7 miles), Los Banos to Dos Amigos 230-kV line (6 miles), and Jasper Sears Road 230-kV line (14 miles). The underlying geology of the alternatives was considered under the umbrella of the proposed Project for this resource assessment. The proposed Project is located on land owned by the Bureau of Reclamation (USBR), California Department of Fish and Wildlife, California Department of Parks and Recreation, and privately-held land. Additional Project components would include construction of breaker terminal bays for the Tracy, San Luis, Las Banos, and Dos Amigos Substations, as well as associated facilities, access roads, and improvements. The proposed Project is intended to minimize costs and improve power delivery associated with the San Luis unit.

REGULATORY CONTEXT

Federal

Paleontological resources (i.e., fossils) are the prehistoric remains of once-living organisms and are considered to be nonrenewable scientific resources. As such, paleontological resources are



afforded protection under the various federal laws and regulations including the Antiquities Act of 1906, the Federal-Aid Highway Act of 1935, the National Environmental Policy Act (NEPA) of 1969, the Federal Land Policy and Management Act of 1976, and Title 43 of the Code of Federal Regulations, among others. Additionally, the Paleontological Resources Protection Act (PRPA) was recently enacted as a result of the passage of the Omnibus Public Lands Management Act of 2009. The PRPA requires federal land management agencies to manage and protect paleontological resources and affirms the authority of existing policies already in place. Federal laws and regulations apply when projects are located on federal lands or federally managed lands, or when they are federally funded. Portions of the proposed Project area traverse lands managed by the USBR and other federal agencies; therefore, federal laws will apply.

State

Paleontological resources are also protected under various state and local laws and regulations including the California Environmental Quality Act (CEQA). Specifically, CEQA (Public Resources Code [PRC] 21000–21889) encourages the protection of all aspects of the environment by requiring state and local agencies to prepare multidisciplinary analyses of the environmental impacts of a proposed project, and to make decisions based on the findings of those analyses.

The procedures, types of activities, persons, and public agencies required to comply with CEQA are defined in the Guidelines for the Implementation of the California Environmental Quality Act (CEQA Guidelines; Title 14, California Code of Regulations [CCR], Chapter 3, Section 15000 et seq.). These guidelines define a historical resource as any object or site that “has yielded or may be likely to yield information important in prehistory” (14 CCR 15064.5[a][3][D]), which is typically interpreted as including fossil materials and other paleontological resources (Association of Environmental Professionals [AEP] 2012). More specifically, destruction of a unique paleontological resource or site or unique geologic feature constitutes a significant impact under CEQA (CEQA Guidelines, Appendix G). CEQA does not provide an explicit definition of a “unique paleontological resource,” but a definition is implied by comparable language within the act relating to archeological resources (PRC 21083.2[g]): “An artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it . . . contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.” One of the questions listed in the Environmental Checklist Form (CEQA Guidelines, Appendix G, Section V[c]) is: “Will the proposed project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?”

Treatment of paleontological resources under CEQA is generally similar to treatment of cultural resources, requiring evaluation of resources in the project; assessment of potential impacts on significant or unique resources; and development of mitigation measures for potentially significant impacts, which may include avoidance, monitoring, or data recovery excavation.

Additionally, PRC 5097.5 affirms that no person shall willingly or knowingly excavate, remove, or otherwise destroy a vertebrate paleontological site or paleontological feature without the express permission of the overseeing public land agency. A violation of this code is a misdemeanor, punishable by a fine not exceeding ten thousand dollars (\$10,000), or by



imprisonment in a county jail not to exceed 1 year, or by both. The code further states under PRC 30244 that any development that would adversely impact paleontological resources shall require reasonable mitigation. These regulations apply to projects located on land owned by or under the jurisdiction of the state or any city, county, district, or other public agency.

Local

Alameda, Stanislaus, San Joaquin, and Merced Counties do not have mitigation requirements that specifically address potential adverse impacts to paleontological resources.

THRESHOLDS FOR DETERMINING SIGNIFICANCE

According to CEQA, the threshold of significance for a negative impact to paleontological resources is reached when a project is determined to disturb or destroy a significant paleontological resource. Significant paleontological resources are defined by the Society of Vertebrate Paleontology (SVP) (2010) as “identifiable” vertebrate fossils, uncommon invertebrate, plant, and trace fossils that provide taphonomic, taxonomic, phylogenetic, paleoecologic, stratigraphic, or biochronological data. These data are important because they are used to examine evolutionary relationships, provide insight on the development of and interaction between biological communities, establish time scales for geologic studies, and for many other scientific purposes (Scott and Springer 2003; SVP 2010).

In general, the Bureau of Land Management (BLM) guidelines are useful for the management of paleontological resources on certain federally-managed or federally-owned land. The BLM defines a significant paleontological resource as follows:

Any paleontological resource that is considered to be of scientific interest, including most vertebrate fossil remains and traces, and certain rare or unusual invertebrate and plant fossils. A significant paleontological resource is considered to be scientifically important because it is a rare or previously unknown species, it is of high quality and well-preserved, it preserves a previously unknown anatomical or other characteristic, provides new information about the history of life on earth, or has identified educational or recreational value. Paleontological resources that may be considered to not have paleontological significance include those that lack provenience or context, lack physical integrity because of decay or natural erosion, or that are overly redundant or are otherwise not useful for research [BLM 2008:1-18].

METHODOLOGY

To determine whether or not fossil localities have been previously discovered within a project area or a particular rock unit, a search of pertinent local and regional museum repositories for paleontological localities within and nearby the area of question is performed. For the proposed Project area, a museum records search was performed utilizing the University of California Museum of Paleontology’s (UCMP’s) online database, which contains paleontological records for Alameda, San Joaquin, Stanislaus, and Merced Counties. The records review was supplemented by a literature and geologic map review to determine the geologic setting and identify known significant paleontological localities in the area.



REGIONAL GEOLOGY

The proposed Project area is situated within the Coast Ranges and Great Valley geomorphic provinces of California (Norris and Webb 1976). A geomorphic province is a region of unique topography and geology that is readily distinguished from other regions based on its landforms and diastrophic history. The Coast Ranges extend about 600 miles from the Oregon border south to the Santa Ynez River in Santa Barbara County and are characterized by numerous north-south-trending peaks and valleys that range in elevation from approximately 500 feet above mean sea level (amsl) to 7,581 feet amsl at the highest summit (Norris and Webb 1976). The width of the range averages 50 miles, and it is bounded on the west by the Pacific Ocean and to the east by the Great Valley geomorphic province; a north-northwest-trending asymmetric structural trough roughly 400 miles long and 50 miles wide (Bartow and Nilsen 1990).

The geology of the Coast Ranges and Central Valley is exceptionally diverse. Although their geomorphological differences are distinct, the two provinces share a common geologic history. The region of the present-day Coast Ranges and Great Valley was covered by marine waters through the Mesozoic and into the Cenozoic (Bartow and Nilsen 1990). During this time, forearc (i.e., the deep marine region between a volcanic arc and the associated subduction zone) marine and nonmarine shale, sandstone, and conglomerate of the Cretaceous Central Valley Sequence were deposited coeval with the accretion of the Franciscan Assemblage (Bartow and Nilsen 1990). Into the late Mesozoic and much of the Cenozoic, unconformable Paleocene to Pliocene marine continental shelf sedimentary rocks were deposited above the Great Valley Sequence within the actively subsiding Central Valley region (Barron 1989; Graymer et al. 1996; Harden 1998). As of the Late Miocene to the Late Pliocene, most of the marine waters in the Great Valley were drained and an orogenic (i.e., mountain-building) episode occurred in the vicinity of the present-day Coast Ranges, resulting in their uplift above sea level (Weissmann et al. 2005). Subsequently, from the Late Pliocene to Holocene, extensive deposits of terrestrial material, including alluvial fans and fluvial sediments, were deposited in the Great Valley and southern Coast Ranges (Norris and Webb 1976). Tectonic activity and extensive faulting continued to occur during the Quaternary period, further uplifting and deforming the Coast Ranges.

The majority of the proposed Project area is situated on the eastern flank of the Diablo Range within the Coast Ranges geomorphic province. The Diablo Range extends approximately 200 miles from Contra Costa County south to Monterey County, and generally consists of rolling hills and grasslands (Norris and Webb 1976). Structurally, the Diablo Range is characterized by anticlinal folds orientated en echelon (i.e., a stepped pattern consisting of parallel structures oblique to the trend), separated by synclinal folds that contain younger sedimentary rocks (Fossen 2010; Norris and Webb 1976). In the vicinity of the proposed Project area, the Diablo Range is highly faulted and transected by many major active or recently active faults, including the northwest-trending Tesla-Ortogonal Fault Zone and the Greenville strike-slip fault (Graymer et al. 1996).



PROPOSED PROJECT AREA GEOLOGY AND PALEONTOLOGY

The proposed Project area is mapped at a scale of 1:24,000 by a series of geologic maps authored by Thomas W. Dibblee Jr. and John A. Minch (2006a-c, 2007a-g). According to these published maps, the proposed Project area is underlain by Cretaceous to Quaternary age terrestrial and marine sedimentary deposits. The lithology, stratigraphy, and paleontology of these units are described in the following sections.

The Cretaceous Great Valley Sequence: Panoche Formation and Moreno Formation

The Panoche Formation and Moreno Formation are members of the Great Valley Sequence, which is extensively exposed throughout the proposed Project area. The Great Valley Sequence records a thick (10,000- to 30,000-foot) accumulation of Jurassic to Paleogene marine mudstone and sandstone deposited within a forearc basin flanked by the Sierra Nevada Batholith to the east and the Franciscan Complex to the west (Harden 1998). The lithology of the Great Valley Sequence reflects the evolution of the Sierran magmatic arc and the unroofing of the Sierran plutons (Bartow and Nilsen 1990). In the eastern Diablo Range, the Cretaceous Panoche Formation rests unconformably on the Coast Range ophiolite and represents the base of the Great Valley Sequence. The Panoche Formation is up to 3,000 feet thick and consists of laterally variable deposits of mudstone and siltstone beds with local sandstone and boulder conglomerate lenses. The unit coarsens upwards into a fine- to medium-grained quartzo-feldspathic sandstone-rich deposit, indicative of a regression sequence (Dibblee and Minch 2006a-c; 2007a-g). The Panoche Formation is light gray to light brown in color, moderately to well-bedded, and well-indurated. The overlying Moreno Formation is up to 1,300 feet thick and was deposited conformably on the Panoche Formation during the Late Cretaceous to Paleocene epochs (Throckmorton 1988). The Moreno Formation consists of fine-grained sediments and is composed of commonly laminated, gray to brown micaceous shale with subordinate selenite gypsum, limestone lenses, and fine- to medium-grained grayish-tan arkose (Throckmorton 1988). The Panoche and Moreno Formations were originally defined by Anderson and Pack (1915) for their type section in the Panoche Hills and are continuously exposed for at least 75 miles throughout the eastern Diablo Range. Sedimentation of the Panoche and Moreno Formations occurred in a diverse marine environment; facies include shallow marine shelf, submarine slope, fluvio-deltaic, and deep-sea fan (Bartow and Nilsen, 1990). The Moreno Formation includes an occurrence of the K-P (Cretaceous-Paleogene) boundary; a chronostratigraphic boundary between the Mesozoic and Cenozoic Eras at 66 million years ago (Ma), during which a global mass extinction event occurred, including the disappearance of large reptiles (Bartow and Nilsen, 1990; Shulte et al. 2010).

An abundant Cretaceous age flora and fauna has been recorded within the deposits of the Great Valley Sequence (UCMP 2014). Numerous localities have been recorded within the Panoche and Moreno Formations, which have yielded marine and terrestrial fossils, including specimens of mollusk, foraminifera, diatoms, ammonite, shark, fish, amphibian, and large reptile, conifer wood, and the remains of flowering plants (BLM 2014; Elder and Miller 1993; Haggart and Ward 1984; UCMP online database 2014). The remains of several large marine reptiles have been recovered within the Moreno Formation from within the eastern Diablo Range, including *Plotosaurus bennisonii* (mosasaur), *P. tuckeri* (mosasaur), and *Plesiotylosaurus crassidens* (mosasaur), *Hydrotherosaurus alexandrae* (plesiosaur), *Fresnosaurus drescheri* (plesiosaur),



and *Aphrosaurus furlong* (plesiosaur), and *Saurolophus* sp. (hadrosaur; terrestrial dinosaur) (Paleobiology Database 2014). In the Panoche Hills, the nearly fully articulated holotype specimen of the plesiosaur *Morenosaurus stocki* was recovered from within the Moreno Formation. In addition, fossilized wood from the Moreno conifer (*Margeriella cretacea*) has been exceptionally well preserved within the Moreno Formation (BLM 2014). Fossilized plant remains recovered from within the Moreno Formation include taxa of *Palmoxylon* sp. (palm), *Ulmium mulleri* (elm), *U. pattersonensis* (elm), *Platanium platanoides* (sycamore), *Platanium californicum* (sycamore), *Magnolioxylon panochensis* (magnolia), and *Tetracentronites panochensis* (shrub) (BLM 2014). On the basis of sedimentological and stratigraphic field studies, Elder and Miller (1993) report that many of the macrofossils within the Great Valley Sequence were identified as nearshore fauna transported by turbidity currents into a deep marine environment. Numerous invertebrate remains have been preserved inside reworked sandy clasts within the fine-grained matrix of conglomerate beds. The sandy clasts and fossils are typically only slightly older than the finer matrix and were likely transported and reworked soon after original deposition and cementation.

Tesla Formation and Laguna Seca Formation

The Eocene Tesla Formation is exposed throughout the proposed Project area, where it is unconformable with the underlying Moreno Formation and overlying Domengine Formation (Bartow 1984, 1991; Dibblee and Minch 2006a-c, 2007a-g). The Tesla Formation is up to 675 feet thick near its type section and was first described by Anderson and Pack (1915) and later redescribed by Huey (1937) based on an exposure near the old coal-mining town of Tesla. The Tesla Formation consists of a light gray to light brown arkose, siltstone, claystone, brown carbonaceous shale, and coal deposits, which were mined during the 19th Century. Carbonaceous material and plant fragments are widespread within the siltstones and sandstones. Common sedimentary structures include trough and planar crossbeds, ripple laminations, cross laminations, and convolute bedding (Throckmorton 1988).

South of the San Luis reservoir, Dibblee and Minch (2006a-c, 2007a-g) map the Tesla Formation as the Laguna Seca Formation, to which they assign an older Paleocene to Eocene age. The provenance and depositional environment of the Laguna Seca Formation is comparable to the Tesla Formation and the two units share a similar lithology; however, their correlation is not certain (Throckmorton 1988). Exposures of the Laguna Seca Formation appear to be restricted to the area south of the San Luis Reservoir. The Laguna Seca Formation was named by Briggs (1953) for its type section near Laguna Seca Creek and is composed of well-lithified, light gray to tan, fine-grained arkosic sandstone and pebbly, grayish-yellow sandy conglomerate with interbedded gray argillaceous shale (Paleobiology Database 2014).

In addition to well-preserved plant material and burrows, the Tesla and Laguna Seca Formations have yielded several Paleocene to Eocene age invertebrate localities from paralic deposits near the proposed Project area (Throckmorton 1988; UCMP 2014). Brackish and shallow water marine fauna, including bivalve, gastropod, schaphopod (tusk shell), and coral have been recovered from the siltstone, sandstone, and mudstone beds (Paleobiology Database 2014).



Domengine Formation

The middle Eocene Domengine Formation is intermittently exposed throughout the proposed Project area where it unconformably overlies the Tesla Formation and Cretaceous rocks of the Franciscan Assemblage and Great Valley Sequence (Bartow 1991). The Domengine Formation records a marine transgression during the early Paleogene and was first described by Anderson and Pack (1905) for exposures north of Coalinga (National Geologic Map Database [NGMDB 2014]). The marine unit is extensively exposed throughout central California and is composed of massive, greenish-gray, medium-grained calcareous sandstone and pebble conglomerate. Green glauconitic sand, typically indicative of slow deposition in a continental shelf environment, is locally abundant within the Domengine Formation and is commonly associated with preserved mollusk shells (Pettijohn et al. 1987). The conglomerate beds consist of pebble to cobble size clasts of Franciscan detritus within a medium- to coarse-grained sandy matrix (Bartow 1991; Oakeshott 1958).

The Domengine Formation has yielded hundreds of gastropod and bivalve fossils characteristic of the Domengine west coast molluscan stage (late early Eocene through early middle Eocene) (Throckmorton 1988). In addition, the UCMP online database (2014) reports that at least one vertebrate locality has been recorded within the Domengine Formation within Fresno County, which yielded specimens of shark and bony fish.

Kreyenhagen Formation

The Eocene Kreyenhagen Formation conformably overlies the Domengine Formation and is discontinuously exposed throughout the eastern Diablo Range and proposed Project area (Bartow 1990; UCMP 2014). The Kreyenhagen Formation was defined by Anderson and Pack (1905) for its type section near Canoas Creek in southwestern Fresno County. The unit records a widespread marine transgression during the Eocene and consists of deep marine sediments composed of laminated white diatomaceous shale; porcelaneous mudstone; and brown argillaceous shale with subordinate interbeds of siltstone, limestone, and pebbly green sand (Bartow 1990; NGMDB 2014). In addition, the Kreyenhagen Formation underlies the Great Valley at depth and is a major source of oil and gas in the San Joaquin Valley (Blueford 1984). Over 400 invertebrate, plant, and microfossil localities have been recorded within the Kreyenhagen Formation in Stanislaus, Merced, Fresno, Contra Costa, Monterey, San Benito, Santa Clara, Kern, and Kings Counties. The localities yielded specimens of echinoderm, brachiopod, bivalve, gastropod, foraminifera, and diatom fossils. In addition, five vertebrate localities were recorded within Fresno County, which yielded unspecified vertebrate remains (UCMP 2014).

The San Pablo Group: the Briones Formation, Cierbo Formation, and Neroly Formation

The Miocene San Pablo Group is exposed in the proposed Project area and extends throughout Contra Costa, Alameda, Stanislaus, and Santa Clara Counties (Graymer et al. 1996). In the proposed Project area, the Briones Formation is conformably overlain by the Cierbo Formation and unconformably underlain by the Tesla Formation. The Briones Formation is the oldest member of the San Pablo Group, which includes the overlying Cierbo and Neroly formations (Carpenter et al. 1984; NGMDB 2014). The Briones Formation was first described by Lawton (1914) for its type section near present-day Briones Regional Park in Contra Costa County and



was later assigned to the San Pablo Group by Clark (1930), on the basis of stratigraphic and faunal correlation (Hall 1958; NGMDB 2014). The shallow marine deposit is up to 2,300 feet thick near its type section and consists of indistinctly bedded fine-grained quartz sandstone, lithic wacke, gray to brown conglomerate, interbedded silty claystone, and resistant shell conglomerate (Chetelat 1995; Graymer et al. 1996; NGMDB 2014). Thin interbeds of well-bedded indurated light gray sand and siltstone are locally present near its base. Conglomerate clasts include black and red chert, quartzite, andesite, argillite, siltstone, basalt, felsic tuff, and quartz grains (Graymer et al. 1996). The Briones Formation has yielded an abundant and diverse invertebrate fauna throughout Contra Costa, Alameda, Stanislaus, and Santa Clara Counties, including taxa of bivalve, gastropod, crustacean, echinoid, and brittle stars. In addition, the deposit has yielded numerous vertebrate localities, including specimens of large land mammals, reptiles, fish, birds, sharks, and mollusks (UCMP 2014). Within Alameda County, at least three localities have been reported from within the Briones Formation, which yielded several fossils of *Desmostylus hesperus* (extinct hippopotamus-like herbivorous mammal) from deposits near Pleasanton and San Jose, including a type specimen.

The Miocene Cierbo Formation was named by Clark (1921) for its type section near the Carquinez straits (NGMDB 2014). The Cierbo Formation consists of poorly to moderately consolidated white to pale yellow brown quartz sandstone interbedded with thin pebble conglomerate lenses and brown shale deposits (Carpenter et al. 1984). The lithology is fine- to coarse-grained, massive to thickly bedded, and moderately friable to indurated. The sandstone is locally crossbedded and is composed of quartz feldspar sand, lithic gravel, and biotite crystals (Barlock 1988). Limonite (an iron oxide-hydroxide mineral that forms due to secondary alteration), black chert, tuff deposits, and carboniferous shale appear locally. The Cierbo Formation is up to 650 feet thick and is mapped as a discontinuous exposure throughout the Coast Ranges, from Solano County in the north to Santa Barbara County in the south (Graymer et al. 1996; UCMP 2014). The fine to coarse lithology indicates a transitional depositional environment that ranged from nearshore to estuarine to terrestrial (Fox 1983). The Cierbo Formation has yielded abundant fossil specimens of Late Miocene invertebrate fauna, including bivalve (clam), gastropod (snail), echinoidea (sea urchin), and scleractinia (stony coral) (UCMP 2014). The Cierbo Formation is especially known for its abundant *Ostrea* (oyster), often found in the coarse sandstone deposits (Graymer et al. 1996). Additionally, the Cierbo Formation has yielded unnamed vertebrate fossils from within its coarse conglomeritic deposits in Contra Costa County (Fox 1984; UCMP 2014).

The Neroly Formation is the youngest member of the San Pablo Group and was first described by Clark and Woodford (1927) for exposures near Mount Diablo. The unit is up to 1,800 feet thick in the northern Diablo Range and is characterized by its distinctive blue-gray sandstone derived from the andesitic eruptions to the east within the Sierra Nevada (Bartow 1984; Throckmorton 1988). The medium-grained sandstone has a massive texture and is predominately composed of andesite fragments, quartz, feldspar, and mica minerals, and exhibits a local brown color. Subordinate lithology within the Neroly Formation includes blue-gray andesite-bearing pebble conglomerate and tuffaceous shale beds (Carpenter 1984). Sedimentation of the Neroly Formation occurred in a shelf to deltatic environment during the Late Miocene and numerous marine and terrestrial invertebrate, vertebrate, and plant fossils of have been recovered from within the Neroly Formation in Stanislaus and San Joaquin Counties (Graymer et al. 1996). Mammal remains of Clarendonian age (Middle to Late Miocene) have been well preserved



within the Neroly Formation. Recovered taxa include canid, *Martinogale alveodens* (primitive skunk), *Serridentinus productus* (proboscidean), antilocaprid, *Merycodus* (pronghorn), *Eucastor lecontei* (primitive beaver), and *Copemys barstowsensis* (primitive New World mouse) (Throckmorton 1988). Additional fossil remains recovered within the Neroly Formation include horse, ground squirrel, eagle ray, gastropod, bivalve, scaphopod, coral, crab, sea urchin, and plants (UCMP 2014).

Oro Loma Formation

The Miocene to Pliocene Oro Loma Formation is exposed within the eastern portion of the proposed Project area where it is unconformable with the underlying Neroly Formation and the overlying Tulare Formation. The Oro Loma Formation was originally defined by Briggs (1953) for its type section near Oro Loma Creek in the Laguna Seca Hills (Graymer et al. 1996; NGMDB 2014). In the vicinity of the Proposed Project area, Dibblee and Minch (2006a-c, 2007a-g) restrict the Oro Loma Formation to Alameda and San Joaquin Counties and refer to similar deposits in Stanislaus and Merced Counties as “unnamed non-marine deposits of Pliocene age.” The two lithostratigraphic units are correlative and will be considered as the same unit for this report (Kelly and Stewart 2008). The Pliocene age deposits of the Oro Loma Formation are up to 300 feet thick near the type section and consist of unconsolidated to moderately consolidated red siltstone, sandstone, and pebble conglomerate interbedded with greenish-gray claystone. Local exposures of cross-bedded calcareous sandstone are common (Graymer et al. 1996; NGMDB 2014).

The Oro Loma Formation has yielded several fossil localities within the eastern Diablo Range (Kelly and Stewart 2008). Although the UCMP database only has one record for a vertebrate locality within Stanislaus County near the proposed Project area, the remains of several terrestrial mammals have been recovered in neighboring Fresno County. During excavations for a power line along Monocline Ridge in Fresno County, between Los Banos and Coalinga, five vertebrate localities (LACM 7664-7668) were identified within the Oro Loma Formation, which yielded four new vertebrate fossils assemblages of Middle to Late Miocene age (Clarendonian to Hemphillian North American Land Mammal Age [NALMA]). Recovered specimens include *Hipparion tehonense* (horse), *Neohipparion leptode* (horse), *Dinohippus* sp. (horse), and *Alforjas* sp. (camel) (Kelly and Stewart 2008; Paleobiology Database 2014).

Tulare Formation

The Late Pliocene to Early Pleistocene Tulare Formation is exposed in Stanislaus, San Joaquin, and Alameda Counties in the vicinity of the proposed Project area (Dibblee and Minch 2006a-c, 2007a-g). The Tulare Formation was defined by Woodring et al. (1940) for exposures in the Kettleman Hills near the old shoreline of Tulare Lake (NGMDB 2014). Near its type section, the Tulare Formation is conformable with the underlying Pliocene San Joaquin Formation; however, near the proposed Project area, the Tulare Formation unconformably overlies the Great Valley Sequence (Page 1983). The Tulare Formation consists of westward-thickening alluvial fan conglomerate, fluvial sandstone, and interbedded lacustrine siltstone and clay deposits, which drained from the Coast Ranges during the Pliocene to Early Pleistocene (Bartow 1990). Near the proposed Project area, the sediments of the Tulare Formation are moderately lithified and composed of thickly-bedded, white to tan marl, massive gray claystone, and local gypsum and



other fresh water evaporates (Dibblee and Minch 2006a-c, 2007a-g). The unit is approximately 1,700 to 3,500 feet thick and is intermittently exposed from the eastern flank of the Diablo Range to the center of the Great Valley, where it interfingers with the Sierran-fed Turlock Lake Formation (Bartow 1991).

Numerous vertebrate localities have been recovered from within the fine-grained sediments of the Tulare Formation within Alameda, San Joaquin, Kern, and Kings Counties, which yielded specimens of horse, cat, bird, dolphin, shark, fish, reptile, and rodent (UCMP 2014). In addition, Woodring et al. (1940) describes a large invertebrate fossil assemblage of freshwater clams and snails recovered from the Tulare Formation near the Kettleman Hills in Kings County (Page 1983). Further, according to the UCMP online database (2014), the remains of several well preserved plants, including taxa of *Sequoiadendron* sp. (giant sequoia), pine, manzanita, fir, and walnut, were recovered during excavations at the Turlock Walnut Energy Center in Stanislaus County.

Quaternary Older Alluvium

Quaternary alluvial deposits of Pleistocene age have proven to yield significant vertebrate fossil localities throughout Alameda, San Joaquin, Stanislaus, and Merced Counties. Pleistocene age alluvial fan and fluvial deposits are exposed in the eastern and northern portions of the proposed Project area. These deposits consist of unconsolidated coarse to fine sand and silt with abundant pebbles and cobbles, which drained from the Coast Ranges during the Quaternary period. On the eastern flank of the Diablo Range, the Pleistocene age sediments are typically elevated relative to younger alluvial deposits, with well developed soil and dissection by channels that are partially filled with Holocene age alluvium (Helley and Graymer 1997). The total thickness of the Pleistocene deposits varies locally, but is up to 150 feet thick in the vicinity of the proposed Project area (Barlock 1988). The Pleistocene age alluvial sediments have preserved a characteristic Ice Age vertebrate fauna of large land mammals, including specimens of ground sloth, mammoth, horse, bison, camel, tapir, ungulate, mastodon, rabbit, vole, and gopher. During excavations associated with the Delta-Mendota Canal in Alameda, San Joaquin, and Stanislaus Counties, at least 20 vertebrate localities were recorded, which yielded numerous specimens of mammals and birds. The depth of fossil recovery is unreported (UCMP 2014).

Quaternary Alluvium

Holocene age alluvial deposits are widely exposed in the proposed Project area (Dibblee and Minch 2006a-c, 2007a-g). The younger Quaternary deposits consist of alluvial gravel and sands that drained from neighboring highlands. Holocene deposits near the proposed Project area generally consist of alluvial fan facies comprised of unconsolidated brown to tan gravelly sand and silt and fluvial facies of brown sand and silty clay (Helley and Graymer 1997). In addition, stream channel deposits composed of poorly to well-sorted sand, silt, gravel, and pebbles are exposed in active washes and embankments within the proposed Project area. Holocene deposits are generally considered too young to contain fossilized remains, but may shallowly overlie older, paleontologically sensitive deposits.



RECORDS SEARCH RESULTS

For this assessment, paleontological locality records maintained by the UCMP online database were reviewed to determine if any previously recorded paleontological resources occur within the proposed Project boundaries or vicinity. The UCMP does not provide specific location data within its online locality database; however, the names of the localities often describe the general area of their recovery. The search indicated that although there are no records for vertebrate fossil localities directly within the corridor of the proposed Project, at least 43 localities have been recovered from within Cretaceous to Pleistocene age deposits near the proposed Project area. The UCMP database contains five locality records for vertebrate fossil remains within the Late Cretaceous to Paleogene Moreno Formation, which yielded specimens of dinosaur, mosasaur, plesiosaur, and fish from Stanislaus and Merced Counties. Additional UCMP locality records for Cenozoic fauna include unspecified vertebrates recovered from within the Panoche Formation in Merced County. At least eight vertebrate localities have been recorded within the Miocene age deposits throughout Alameda, San Joaquin, and Stanislaus Counties, including one from within the Oro Loma Formation, four from within the Briones Formation, and three from the Neroly Formation. Recovered Miocene-age specimens include horse, *Desmostylus* sp. (hippopotamus-like mammal), tortoise, turtle, canid, and ungulate. Further, the Pliocene-Pleistocene Tulare Formation yielded several fish, bird, and terrestrial mammal specimens from four localities near California Aqueduct in the vicinity of the proposed Project area. Lastly, UCMP collections indicate that at least 26 vertebrate localities have been recorded within Quaternary age sedimentary deposits near the proposed Project area, which yielded specimens of mammoth, horse, bison, ground sloth, mastodon, tapir, rodent, bird, rabbit, and turtle. The UCMP online database also contains records for numerous invertebrate localities for the geologic units that underlie the proposed Project area. Although not typically significant, these invertebrate localities have yielded numerous fossils of bivalve, gastropod, cephalopod, and foraminifera, including several type specimens. Depth for each locality is unreported. The results of the museum records search are presented below in Table 1 (UCMP online database 2014).

Table 1
Vertebrate Localities Reported from within Geologic Units in the Vicinity of the Proposed Project Area in Alameda, San Joaquin, Stanislaus, and Merced Counties^a

Locality No.	Geologic Unit	Age	Taxa
UCMP D715	Panoche Formation	Late Cretaceous	Unspecified vertebrates
UCMP V6418	Moreno Formation	Late Cretaceous to Paleogene	<i>Morenosaurus stocki</i> (plesiosaur), <i>Encodus ferox</i> ("saber-toothed" bony fish)
UCMP V67238	Moreno Formation	Late Cretaceous to Paleogene	Mosasauridae (mosasaur), Elasmosauridae (plesiosaur), Osteichthyes (bony fish)
UCMP V72116	Moreno Formation	Late Cretaceous to Paleogene	Unspecified vertebrates
UCMP V3622	Moreno Formation	Late Cretaceous to Paleogene	Hadrosaurinae (hadrosaurid dinosaur), <i>Plotosaurus tuckeri</i> (mosasaur)
UCMP V3718	Moreno Formation	Late Cretaceous to Paleogene	<i>P. bennisoni</i> (mosasaur)
UCMP V93153	Oro Loma Formation	Miocene	<i>Pliohippus</i> sp. (horse)
UCMP V3108	Briones Formation	Late Miocene	<i>Desmostylus</i> sp. (hippopotamus-like herbivorous mammal)



Table 1 (Continued)
Vertebrate Localities Reported from within Geologic Units in the Vicinity of the Proposed Project Area in Alameda, San Joaquin, Stanislaus, and Merced Counties^a

Locality No.	Geologic Unit	Age	Taxa
UCMP V65415	Briones Formation	Late Miocene	<i>D. hesperus</i> (Type specimen)
UCMP V6534	Briones Formation	Late Miocene	<i>D. hesperus</i>
UCMP V4957	Briones Formation	Late Miocene	Cryptodira (suborder of tortoises and turtles)
UCMP V71106- V71107 (2)	Neroly Formation	Late Miocene	<i>Borophagus</i> sp. (canid), <i>Nannippus</i> sp. (extinct horse), <i>Capromeryx</i> sp. (small ungulate)
UCMP V94011	Neroly Formation	Late Miocene	Unspecified vertebrates
UCMP V7079- V7080 (2)	Tulare Formation	Pliocene to Pleistocene	<i>Orthodon microlepidotus</i> (Sacramento blackfish), <i>Acipenser</i> sp. (sturgeon), <i>Archoplites interruptus</i> (Sacramento perch), Actinopterygii (ray-finned fish), <i>Branta</i> sp. (black geese), Equidae (horse), rodent
UCMP V70122- V70123 (2)	Tulare Formation	Pliocene to Pleistocene	Osteichthyes
UCMP V5005	Unspecified Quaternary age deposit	Pleistocene	<i>Equus</i> sp. (horse)
UCMP V6808	Unspecified Quaternary age deposit	Pleistocene	<i>Equus</i> sp.
UCMP V93152	Unspecified Quaternary age deposit	Pleistocene	Leporidae (family of rabbits and hares)
UCMP V3823	Unspecified Quaternary age deposit	Pleistocene	Pilosa (order includes sloths and anteaters)
UCMP V4727- V4728, V4801- V4803, V4816- V4818, V4859- V4862, V69166 (13)	Unspecified Quaternary age deposit	Pleistocene	<i>Bison</i> sp., Elephantidae (mammoths and elephants), <i>Microtus</i> sp. (vole), <i>Mammuthus</i> sp. (mammoth), <i>Equus</i> sp., <i>Glossotherium</i> (Harlan's ground sloth), Camelidae (camel), <i>Tapirus merriami</i> (tapir)
UCMP V3315	Unspecified Quaternary age deposit	Pleistocene	<i>Camelops hesternus</i> (camel)
UCMP V66150	Unspecified Quaternary age deposit	Pleistocene	<i>Megalonix jeffersonii</i> (giant ground sloth)
UCMP V4807- V4811, V4819 (6)	Unspecified Quaternary age deposit	Pleistocene	<i>Mammut</i> sp. (mastodon), <i>Thomomys</i> sp. (smooth-toothed pocket gopher), Equidae, <i>Bison</i> sp., Artiodactyla (even-toed ungulate)
UCMP V6321	Unspecified Quaternary age deposit	Pleistocene	Camelidae, <i>Equus</i> sp., Aves (bird), <i>Mammuthus columbi</i>

a - UCMP 2014.



FINDINGS AND RECOMMENDATIONS

Based on the literature review and museum records search results, the geologic units underlying the proposed Project area have a paleontological resource potential ranging from low to high in accordance with the SVP (2010) and BLM's (2008) Potential Fossil Yield Classification (PFYC) system. The Panoche, Moreno, Oro Loma, Briones, Neroly, and Tulare Formations, as well as the Quaternary older alluvium, are considered to have a high paleontological resource potential in accordance to SVP's tripartite sensitivity scale, equivalent to PFYC Class 4, because they have proven to yield vertebrate fossils near the proposed Project area and throughout California. Although the UCMP contains no vertebrate localities for the Kreyenhagen, Domengine, and Cierbo Formations within Alameda, San Joaquin, Stanislaus, or Merced Counties, these units have yielded intermittent vertebrate localities elsewhere in California; as such, they are assigned to PFYC Class 3 (moderate paleontological resource potential). The Tesla Formation and Laguna Seca Formations are assigned a low paleontological resource potential (PFYC Class 2); although they contain a number of invertebrate localities, they have not yielded significant vertebrate fossils. In addition, Holocene age alluvial deposits have a low paleontological resource potential recommendation (PFYC Class 2) because they are generally too young to preserve fossilized remains; however, these alluvial deposits may shallowly overlie older intact fine-grained Pleistocene-age sediments. Therefore, their paleontological resource potential is low to high, increasing with depth.

In general, the potential for a given project to result in negative impacts to paleontological resources is directly proportional to the amount of ground disturbance associated with the project; thus, the higher the amount of ground disturbances within geological deposits with a known paleontological sensitivity, the greater the potential for negative impacts to paleontological resources. Since this Project entails construction of a new transmission line, new ground disturbances are anticipated. Consequently, the likelihood of impacting scientifically significant fossils because of Project development is high. Therefore, a qualified paleontologist should be retained to develop and implement a Paleontological Resource Mitigation Plan. The following mitigation measures have been developed in accordance with SVP and BLM guidelines; if implemented, these measures will satisfy the requirements of CEQA and NEPA. These measures have been used by professional paleontologists for many years and have proven to be effective in reducing or eliminating adverse impacts to paleontological resources as a result of private and public development projects throughout California and elsewhere.

Preconstruction Survey

It is recommended that a qualified paleontologist be retained to conduct a field reconnaissance survey of the Project area prior to any ground-disturbing activities. Any required permits should be obtained prior to the survey. The purpose of the field survey will be to visually inspect the ground surface for exposed fossils or traces thereof and to evaluate geologic exposures for their potential to contain preserved fossil material at the subsurface. Only Project areas classified as having a PFYC Class 3 or higher will be subject to a pedestrian walkover. Particular attention will be paid to rock outcrops, both inside and in the vicinity of the Project area, and any areas where geologic sediments are well exposed. Areas determined to have a PFYC Class 1 or 2, or areas that are heavily disturbed or otherwise obscured by heavy vegetation will not require a field survey.



All fossil occurrences observed during the course of fieldwork, significant or not, should be adequately documented and recorded at the time of discovery. The data collected for each fossil occurrence should include, at minimum, the following information: Universal Transverse Mercator (UTM) coordinates, approximate elevation, description of taxa, lithologic description, and stratigraphic context (if known). In addition, each locality should be photographically documented with a digital camera. If feasible, with prior consent of the landowner(s), all significant or potentially significant fossils should be collected at the time they are observed in the field. If left exposed to the elements, fossil materials are subject to erosion and weathering. If the fossil discovery is too large to collect during the survey (e.g., a dinosaur skeleton or bone bed) and requires a large-scale salvage effort, then it will be documented and a mitigation strategy will be devised pursuant to SVP (2010) guidelines.

Worker's Environmental Awareness Training

Prior to the start of the proposed Project activities, all field personnel will receive a worker's environmental awareness training module on paleontological resources. The training will provide a description of the fossil resources that may be encountered in the Project area, outline steps to follow in the event that a fossil discovery is made, and provide contact information for the Project Paleontologist and on-site monitor(s). The training will be developed by the Project Paleontologist and may be conducted concurrent with other environmental training (e.g., cultural and natural resources awareness training, safety training, etc.).

Paleontological Mitigation Monitoring

Prior to the commencement of ground-disturbing activities, a qualified and professional paleontologist will be retained to prepare and implement a Paleontological Resource Mitigation Plan for the proposed Project. Initially, full-time monitoring will be required during ground-disturbing activities in the areas of the Project with a recommended paleontological resource potential of Class 4 or higher (i.e., Panoche Formation, Moreno Formation, Oro Loma Formation, Briones Formation, Neroly Formation, Tulare Formation, and Quaternary older alluvium). Part-time monitoring or spot checking will occur in areas of the Project underlain by geologic units with a recommended paleontological resource potential of Class 3. In addition, spot checking will also occur in Project areas underlain by Quaternary alluvial deposits in order to determine if underlying sensitive geologic units are being impacted by construction, and at what depth.

Monitoring will entail the visual inspection of excavated or graded areas and trench sidewalls. In the event that a paleontological resource is discovered, the monitor will have the authority to temporarily divert the construction equipment around the find until it is assessed for scientific significance and collected. All paleontological work on federally managed land must be conducted under the appropriate permit.

Monitoring should include matrix screening for the presence of microfossils, the frequency of which will be determined by the Project Paleontologist. Monitoring is largely a visual inspection of sediments; therefore, the most likely fossils to be observed will be macrofossils of vertebrates (bones, teeth, tusk) or invertebrates (shells). At the discretion of the Project Paleontologist, the monitor will periodically screen sediments to check for the presence of microfossils that can be



seen with the aid of a hand lens (i.e., microvertebrates). Should microvertebrate fossils be encountered during the screening process, then bulk matrix samples will be taken for processing off site. For each fossiliferous horizon or paleosol, a standard sample (4.0 cubic yards or 6,000 pounds) will be collected for subsequent wet-screening per SVP (2010) guidelines.

Fossil Preparation, Curation, and Reporting

Upon completion of fieldwork, all significant fossils collected will be prepared in a properly equipped paleontology laboratory to a point ready for curation. Preparation will include the careful removal of excess matrix from fossil materials and stabilizing and repairing specimens, as necessary. Following laboratory work, all fossils specimens will be identified to the lowest taxonomic level, cataloged, analyzed, and curated. The fossil specimens must be delivered to the accredited museum repository identified on the permit and receipt(s) of collections will be submitted to Western. This delivery should be made as soon as practical but no later than 60 days after all fieldwork is completed. The cost of curation is assessed by the repository and will be the responsibility of Western.

At the conclusion of laboratory work and museum curation, a Paleontological Mitigation Report will be prepared describing the results of the paleontological mitigation monitoring efforts associated with the Project. The report will include a summary of the field and laboratory methods, an overview of the Project area geology and paleontology, a specimen inventory of all taxa recovered (if any), an analysis of fossils recovered (if any) and their scientific significance, the signed receipt of confirmation of museum deposition, and recommendations. The report should be submitted to the designated repository, Western, and any other interested state or federal agencies involved within 45 days following completion of monitoring and laboratory work.

It has been a pleasure assisting you with this Project. If you have any questions, please do not hesitate to contact Jessica DeBusk at jdebusk@appliedearthworks.com or (626) 578-0119.

Sincerely,

Heather Clifford
Associate Paleontologist
Applied EarthWorks, Inc.

Jessica DeBusk
Paleontology Program Manager
Applied EarthWorks, Inc.



REFERENCES

Anderson, Robert, and R.W. Pack

- 1905 A stratigraphic study in the Mount Diablo Range of California. *California Academy of Sciences Proceedings, 3rd Series* 2(2): 155-248.
- 1915 Geology and oil resources of the west border of the San Joaquin Valley north of Coalinga, California. *U.S. Geological Survey Bulletin* 603, 220 p.

Association of Environmental Professionals (AEP)

- 2012 California Environmental Quality Act (CEQA) Statutes and Guidelines. Electronic document, http://ceres.ca.gov/ceqa/docs/CEQA_Handbook_2012_wo_covers.pdf, accessed 4 September 2014.

Barlock, Vincent E.

- 1988 Geologic Map of the Livermore Gravels, Alameda County, California. U.S. *Geological Survey Open-File Report* 88-516.

Barron, John A.

- 1989 Diatom Stratigraphy of the Monterey Formation and Related Rocks, San Jose 30 by 60 Minute Quadrangle, California. *U.S. Geological Survey Open-File Report* 89-565.

Bartow, J.A.

- 1984 Revisions in the Tertiary stratigraphy of the east flank of the Diablo Range, central California. In *Stratigraphic Notes, U.S. Geological Survey Bulletin* 1605-A.
- 1990 A Summary of the Cenozoic Stratigraphy and Geologic History of the Coalinga Region, Central California. *U.S. Geological Survey Professional Paper* 1487.

Bartow, J. A., and T. H. Nilsen

- 1990 Review of the Great Valley Sequence, Eastern Diablo Range and Northern San Joaquin Valley, Central California. *U.S. Geological Survey Open-File Report* 90-226, Menlo Park, California.

Blueford, Joyce R.

- 1984 Kreyenhagen Formation and Related Rocks – A History. In *Blueford, J.R., ed., Kreyenhagen and Related Rocks, Pacific Section, Society for Sedimentary Geology*, p. 1–7.

Briggs, L.I., Jr.

- 1953 Geology of the Ortigolita Peak Quadrangle, California. *California Division of Mines Bulletin* 167. Scale 1:62,500.

Bureau of Land Management

- 2008 *Assessment and Mitigation of Potential Impacts to Paleontological Resources*. Instruction Memorandum No. 2009-011.



Bureau of Land Management (continued)

- 2014 *Paleontological Resources, Hollister Field Office*. Electronic document, <http://www.blm.gov/ca/st/en/fo/hollister/paleo.print.html>, last updated 22 August 2014, accessed 5 September 2014.

Carpenter, D. W., J. J. Sweeney, P. W. Kasameyer, N. R. Burkhard, K. G. Knauss, and R. J. Shleman

- 1984 *Geology of the Lawrence Livermore National Laboratory and Adjacent Area*. Lawrence Livermore National Laboratory, University of California, Berkeley.

Chetelat, Guy F.

- 1995 *Provenance of the Upper-Miocene Briones Formation in the Central Diablo Range, California*. Unpublished Master's thesis, San Jose State University, electronic document, http://scholarworks.sjsu.edu/etd_theses/981/, accessed 8 September 2014.

Clark, B. L.

- 1921 The marine Tertiary of the west coast of the United States; its sequence, paleogeography, and the problems of correlation. *Journal of Geology* 29(7): 583-614.
1930 Tectonics of the Coast Ranges of Middle California. *Geological Society of America Bulletin* 41(4):747-828.

Clark, B. L., and A.O. Woodford

- 1927 The Geology and Paleontology of the Type Section of the Meganos Formation (lower middle Eocene) of California. *University of California Publications Bulletin of the Department of Geological Sciences* 17(2): 63-142.

Dibblee, T.W., and J.A. Minch

- 2006a *Geologic Map of the Byron Hot Springs & Clifton Court Forebay Quadrangles, Contra Costa, Alameda, & San Joaquin Counties, California*. Dibblee Geological Foundation Map # DF-195, Dibblee Geological Foundation, Santa Barbara.
2006b *Geologic Map of the Midway & Tracy Quadrangles, Alameda & San Joaquin Counties, California*. Dibblee Geological Foundation Map # DF-243, Dibblee Geological Foundation, Santa Barbara.
2006c *Geologic Map of the Lone Tree Creek Quadrangle, Alameda, San Joaquin, and Stanislaus Counties, California*. Dibblee Geological Foundation Map # DF-242, Dibblee Geological Foundation, Santa Barbara.
2007a *Geologic Map of the Ortigalita Peak NW and Charleston School Quadrangles, Merced and Fresno Counties, California*. Dibblee Geological Foundation Map # DF-331, Dibblee Geological Foundation, Santa Barbara.
2007b *Geologic Map of the Los Banos Valley Quadrangle, Merced County, California*. Dibblee Geological Foundation Map # DF-332, Dibblee Geological Foundation, Santa Barbara.
2007c *Geologic Map of the San Luis Dam and Volta Quadrangles, Merced County, California*. Dibblee Geological Foundation Map # DF-335, Dibblee Geological Foundation, Santa Barbara.



Dibblee, T.W., and J.A. Minch (continued)

- 2007d *Geologic Map of the Crevison Peak and Howard Ranch Quadrangles, Merced, Santa Clara, and Stanislaus Counties, California*. Dibblee Geological Foundation Map # DF-345, Dibblee Geological Foundation, Santa Barbara.
- 2007e *Geologic Map of the Orestimba Peak and Newman Quadrangles, Merced and Stanislaus Counties, California*. Dibblee Geological Foundation Map # DF-344, Dibblee Geological Foundation, Santa Barbara.
- 2007f *Geologic Map of the Patterson Quadrangle, Stanislaus County, California*. Dibblee Geological Foundation Map # DF-342, Dibblee Geological Foundation, Santa Barbara.
- 2007g *Geologic Map of the Solyo and Westerley Quadrangles, San Joaquin and Stanislaus Counties [California]*. Dibblee Geological Foundation Map # DF-340, Dibblee Geological Foundation, Santa Barbara.

Elder, William P., and John W. Miller

- 1993 Map and Checklists of Jurassic and Cretaceous Macrofossil Localities within the San Jose 1:100,000 Quadrangle, California, and Discussion of Paleontological Results. *U.S. Geological Survey Open-File Report 93-503*.

Fossen, H.

- 2010 *Structural Geology*. Cambridge Press, New York.

Fox, Kenneth F.

- 1983 Tectonic Setting of Late Miocene, Pliocene, and Pleistocene Rocks in Part of the Coast Ranges North of San Francisco, California. *U.S. Geological Survey Professional Paper 1239*. Washington, D.C.

Graymer, R. W., D. L. Jones, and E. E. Brabb

- 1996 Preliminary Geologic Map Emphasizing Bedrock Formations in Alameda County, California: A Digital Database. Electronic document, <http://pubs.usgs.gov/of/1996/of96-252/>. *U.S. Geological Survey Open-File Report 96-252*.

Haggart, James W., and Peter D. Ward

- 1984 Late Cretaceous (Santonian and Campanian) Stratigraphy of the Northern Sacramento Valley, California. *Geological Society of America Bulletin* 95(5):618–627.

Hall, Clarence A.

- 1958 Geology and Paleontology of the Pleasanton Area, Alameda and Contra Costa Counties, California. *University of California Publications in Geological Sciences* 34(1). University of California Press, Berkeley.

Harden, Deborah R.

- 1998 *California Geology*. Prentice Hall, Inc., New Jersey.



Helley, E. J., and R. W. Graymer

- 1997 Quaternary Geology of Alameda County, and Parts of Contra Costa, Santa Clara, San Mateo, San Francisco, Stanislaus, and San Joaquin Counties, California: A Digital Database. Scale 1:100,000. *U.S. Geological Survey Open-File Report 97-97*.

Huey, A.S.

- 1937 Stratigraphy of the Tesla Quadrangle, California. *Geological Society of America Proceedings* 1936:335–336.

Kelly, Thomas S., and J.D. Stewart

- 2008 New Records of Middle and Late Miocene Perissodactyla and Artiodactyla from the Western Border of the San Joaquin Valley, Diablo Range, Fresno County, California. *Contributions in Science* 516:1–29, Natural History Museum of Los Angeles County.

Lawton, A. C.

- 1914 *San Francisco Folio, California, Tamalpais, San Francisco, Concord, San Mateo, and Hayward Quadrangles*. U.S. Geological Survey Geologic Atlas of the United States Folio # GF-193.

National Geologic Map Database (NGMDB)

- 2014 Briones Sandstone. GEOlex Database, electronic database, http://ngmdb.usgs.gov/Geolex/NewRefsmry/sumry_4557.html, accessed September 2014.

Norris, Robert M., and Robert W. Webb

- 1976 *Geology of California*. John Wiley & Sons, New York.

Oakeshott, G.B.

- 1958 Geology and Mineral Deposits of San Fernando Quadrangle, Los Angeles County, California. *California Division of Mines and Geology Bulletin* 172.

Schulte, Peter, Laia Alegret, Ignacio Arenillas, Jose A. Arz, Penny J. Barton, Paul R. Bown, Timothy J. Bralower, Gail L. Christeson, Philippe Claeys, Charles S. Cockell, Gareth S. Collins, Alexander Deutsch, Tamara J. Goldin, Kazuhisa Goto, José M. Grajales-Nishimura, Richard A. F. Grieve, Sean P. S. Gulick, Kirk R. Johnson, Wolfgang Kiessling, Christian Koeberl, David A. Kring, Kenneth G. MacLeod, Takafumi Matsui, Jay Melosh, Alessandro Montanari, Joanna V. Morgan, Clive R. Neal, Douglas J. Nichols, Richard D. Norris, Elisabetta Pierazzo, Greg Ravizza, Mario Rebolledo-Vieyra, Wolf Uwe Reimold, Eric Robin, Tobias Salge, Robert P. Speijer, Arthur R. Sweet, Jaime Urrutia-Fucugauchi, Vivi Vajda, Michael T. Whalen, and Pi S. Willumsen

- 2010 The Chicxulub Asteroid Impact and Mass Extinction at the Cretaceous- Paleogene Boundary. *Science* 327 (5970): 1214-1218.



Page, R. W.

- 1983 Geology of the Tulare Formation and Other Continental Deposits, Kettleman City Area, San Joaquin Valley, California, with a Section on Ground-Water Management Considerations and Use of Texture Maps. *U.S. Geological Survey Water Resources Investigations Report* 83-4000.

Paleobiology Database

- 2014 Fossilworks web-based portal. Electronic document, <http://fossilworks.org> and paleodb.org, accessed September 2014.

Pettijohn, F. J., Paul Edwin Potter, and Raymond Siever

- 1987 *Sand and Sandstone*, Second Edition. Springer-Verlag, New York.

Scott, Eric, and Kathleen Springer

- 2003 CEQA and Fossil Preservation in California. The *Environmental Monitor* Fall 2003, Association of Environmental Professionals, Sacramento, California.

Society of Vertebrate Paleontology (SVP)

- 2010 Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources. Society of Vertebrate Paleontology Impact Mitigation Guidelines Revision Committee.

Throckmorton, C. K.

- 1988 Geology and Paleontology of the Tesla Formation, Alameda and San Joaquin Counties, Central California. *U.S. Geological Survey Open-File Report* 88-59.

University of California Museum of Paleontology (UCMP)

- 2014 UCMP Specimen Search, Online Collections. Electronic document, <http://ucmpdb.berkeley.edu>, accessed on 5 September 2014.

Weissmann, G. S., G. L. Bennett, and A. L. Lansdale

- 2005 Factors Controlling Sequence Development on Quaternary Fluvial Fans, San Joaquin Basin, California, U.S.A. In *Alluvial Fans: Geomorphology, Sedimentology, Dynamics*, by A. Harvey, A. Mather, and M. Stokes, p. 169–186. Geological Society of London Special Publication 251.

Woodring, W. P., Ralph Steward, and R.W. Richards

- 1940 Geology of the Kettleman Hills oil field, California. *U.S. Geological Survey Professional Paper* 195.

Appendix H

SHPO Correspondence



Department of Energy
Western Area Power Administration
Sierra Nevada Region
114 Parkshore Drive
Folsom, California 95630-4710

NOV 3 2014

Ms. Carol Roland-Nawi, Ph.D.
State Historic Preservation Officer
California Office of Historic Preservation
1725 23rd Street
Suite 100
Sacramento, CA 95816

Ms. Roland-Nawi, Ph.D.:

The Western Area Power Administration (Western), Sierra Nevada Region (SNR), is a power marketing administration with the U.S. Department of Energy. SNR markets power in northern and central California and portions of Nevada to wholesale and Federal end-use customers such as towns, rural electric cooperatives, public utility and irrigation districts, Federal, state, and military agencies, Native American tribes, power marketers, and Bureau of Reclamation (Reclamation) water customers. Most power that SNR markets is generated by power plants owned and operated by Reclamation as part of the California Central Valley Project (CVP), including those at Shasta, Folsom, Trinity and New Melones dams. Marketing and ensuring the delivery and reliability of electrical resources to customers is SNR's primary function. In addition, Western operates and maintains 18 substations and 884 miles of 69- to 500-kilovolt (kV) CVP transmission lines.

In cooperation with Reclamation and the San Luis & Delta Mendota Water Authority (Authority) Western is in the very early planning stages of preparing a joint National Environmental Policy Act (NEPA) and California Environmental Quality Act (CEQA) document to consider and analyze the potential environmental impacts of a proposed new transmission line(s) construction project between Tracy and San Luis and/or Los Banos, California. The Proposed Project (Undertaking) is referred to as the San Luis Transmission Line Project (SLTP). The purpose of the Proposed SLTP Undertaking is to connect existing CVP facilities into Western's CVP transmission line system. For the purposes of compliance with NEPA and CEQA, Western and the Authority are joint lead agencies. Western is designated the lead federal agency for NEPA compliance and the Authority is the lead state agency for CEQA compliance. The resulting document will be a joint Environmental Impact Statement and Environmental Impact Report (EIS/EIR) scheduled to be finalized at the end of 2016. The first public draft of the EIS/EIR is scheduled to be completed February 2015.

At this time we are writing to initiate consultation with you pursuant to Section 106 of the National Historic Preservation Act (NHPA) (16 US Code §470, as amended 2006) and its implementing regulations, 36 CFR Part 800 *Protection of Historic Properties*, (as amended 8/5/2004), regarding the Proposed SLTP Undertaking. Pursuant to §800.2(a)(2), Western is

designated Lead Federal agency for the purposes of Section 106 consultation. The Proposed SLTP Undertaking requires the Authority under CEQA and the California Public Resource Code (PRC) §5024(f) and 5024.5 to provide notification and submit documentation to you regarding any potential adverse effects to state-owned historical resources or historical resources on or eligible for inclusion in the California Register of Historical Resources (CRHP). In order to reduce duplicatory consultation requirements between NHPA and CEQA for the same Undertaking, Western will be conducting and/or coordinating all required identification and evaluation steps in consultation with you to satisfy NHPA and CEQA requirements in cooperation with the Authority. Please let Western know if you have any objections or concerns regarding this approach.

1. PROJECT BACKGROUND

The San Luis Reservoir Unit (SLU), a water pumping and power generation plant located in Merced County, was authorized on June 3, 1960 under CVP, and included construction of needed transmission and distribution facilities. Western owns and operates most of the transmission lines constructed under the CVP and in addition has the statutory responsibility to make the necessary arrangements to deliver electrical transmission power to all federally authorized facilities constructed as part of CVP. Since 1965, the United States has had a contract with the Pacific Gas and Electric Company (PG&E) to transmit power between Western's Tracy Substation and SLU utilizing PG&E's own transmission/distribution systems. This contract expires in 2016 and will not be extended or replaced. As a result, transmission service is expected to be provided by the California Independent System Operator (CAISO) starting April 1, 2016 (moving Federal power through CAISO controlled grid to SLU generation loads). The cost to SLU users to receive this service from the CAISO is expected to increase by \$10 million per year.

Reclamation owns, operates, and manages dams, power plants and canals in California that were constructed under CVP. Reclamation is also a water management agency and is the largest wholesaler of water in the country. Reclamation holds water contracts with their water customers. The Authority, established in 1992, consists of water agencies representing approximately 2,100,000 acres of 29 federal and exchange water service contractors within the western San Joaquin Valley, San Benito, and Santa Clara counties. As a Reclamation customer, the Authority operates and maintains certain Reclamation CVP facilities including SLU.

Reclamation's purpose and need of the Proposed SLTP Undertaking is to continue to economically pump, store, convey, and deliver federal water resources through the SLU when the current contract with PG&E expires. To meet this need, Reclamation requested Western to investigate various transmission service arrangements that would allow Reclamation to continue economic delivery of federal water when the current contract with PG&E expires. Reclamation submitted to Western a request for electrical transmission service to interconnect several key SLU facilities into Western's CVP transmission line system. Western must respond to Reclamation's transmission request consistent with Western's Open Access Transmission Tariff as well as other existing laws and statutory responsibilities.

Reclamation's water contractors have a direct interest in Western's transmission service arrangements to serve the SLU. The Authority must decide on how to participate in the proposed transmission of Federal power from Western's Tracy Substation to the SLU.

2. DESCRIPTION OF THE UNDERTAKING

Under the Proposed SLTP Undertaking, Western would construct, own, operate, and maintain about 85 miles of new transmission lines that cross Alameda, San Joaquin, Stanislaus, and Merced counties along the foothills to the west of the San Joaquin Valley. Western would also upgrade or expand existing substations or construct two new substations to accommodate the terminations for these new transmission lines. New substations could be constructed adjacent to the existing Tracy and Los Banos substations. Enclosure 1, ***Cultural Resources Background and Field Strategy Report for the San Luis Transmission Project (SLTP), Alameda, San Joaquin, Stanislaus, and Merced Counties, California, June 2014*** provides you with an overview map of the Proposed SLTP Undertaking (*Figure 1-1*).

The Proposed SLTP Undertaking would consist of four new transmission line segments. For the purposes of NEPA/CEQA evaluation and analysis of the affected environment, Corridor Study Areas (CSA) ranging from 220 feet to 4,000 feet wide were established for all transmission line segments where a final transmission line right-of-way (ROW) would be considered. The CSA is wider than then what a required ROW would eventually be (125-200 feet width for 230 and 500-kV transmission lines) to allow flexibility in siting the transmission structures to minimize environmental impacts or to accommodate engineering constraints. Below are the proposed (Proposed Project Corridors) CSA routes. Much of the proposed transmission line corridors would follow existing high-voltage transmission line corridors in the vicinity.

- Tracy to Los Banos 500-kilovolt (kV) Corridor. A single-circuit 500-kV transmission line, about 62 miles long connecting the Tracy and Los Banos Substations.
- Los Banos to San Luis 230-kV Corridor. A 230-kV transmission line about 1.4 miles long connecting the San Luis and Los Banos Substations.
- San Luis to O'Neill 70-kV Corridor. A single-circuit 70-kV transmission line, about 5 miles long connecting the San Luis and O'Neill Substations.
- San Luis to Dos Amigos 230-kV Corridor. A 230-kV transmission line about 18 miles long connecting the San Luis and Dos Amigos Substations.

In addition to the Proposed Project corridors, a number of Alternative corridors are also being examined. For complete descriptions of the Proposed and Alternative corridors please refer again to enclosure 1, Section 1.0, pages 1-6.

The Proposed SLTP Undertaking would also include ancillary facilities, such as communication facilities for control and protection and improvements to existing access roads, construction of new permanent access roads, and temporary access roads. Construction staging areas and helicopter landing zones would also be required. Other activities would include, clearing the ROW of vegetation, excavation and grading for new pole structures, and stringing of conductor lines.

In accordance with §800.4 (a) and (b), we have initiated steps to define the APE for the SLTP Undertaking and to identify the presence of historic properties and historical resources within the APE.

3. AREA OF POTENTIAL EFFECTS

The Area of Potential Effects (APE) for the Undertaking is defined in accordance with §800.16(d). For the purposes of §800.4, we are currently defining the potential direct effects (DE) to be all Proposed and Alternative CSA and all ancillary areas required for construction of the proposed transmission lines.

Potential indirect effects (IE) include visual and noise intrusions that could diminish the historic or aesthetic values of certain types of cultural resources within the purview of the proposed SLTP transmission lines. The APE for IE is defined as extending up to 1/4 miles outside of the CSA. The CSA parallel several existing transmission line structures with a few exceptions to short segments of Alternatives corridors. Enclosure 2 describes the types of surface and subsurface impacts associated with the construction of the Proposed SLTP Undertaking.

4. IDENTIFICATION OF HISTORIC PROPERTIES AND HISTORICAL RESOURCES WITHIN THE APE.

Native American Consultation

By letter of January 22, 2014, we contacted the Native American Heritage Commission (NAHC) and requested a current contact list of all Native American groups who might have an interest in the proposed SLTP project area (enclosure 3). We also requested that they conduct a search of their Sacred Lands file to determine the presence of any sacred sites or traditional cultural properties and landscapes within the APE. By letter of January 29, 2014, NAHC responded with a list of contacts and a negative result of the Sacred Lands search (enclosure 4). By letter of March 3, 2014, we contacted all Native American groups on the list provided by the NAHC (enclosure 5). As of this time we have received one response from the California Valley Miwok Tribe who states they have no issues, but request to be notified in the event of any inadvertent discoveries associated with Miwok artifacts and/or human remains (enclosure 6). Another individual, Mr. Don Hankins contacted us with suggestions for mitigation measures should the Proposed SLTP Project impact sites or areas important to Native Americans, specifically, the Miwok Tribe. We will continue to keep all of the Tribal contacts informed of any changes to the Proposed SLTP Undertaking and will continue to be responsive to any future requests for consultation. The APE for the Proposed SLTP Undertaking does not cross tribal reservations or Native American Trust territories. This consultation complies with California State policy as defined in Executive Order B-10-11.

Class I Inventory Archival and Records Search

In further efforts to identify potential historic properties within the APE, Western has completed an archival records check at the appropriate California Information Centers of the California Historical Resources Information System (CHRIS). This report entitled, ***Cultural Resources Background and Field Strategy Report for the San Luis Transmission Project (SLTP), Alameda, San Joaquin, Stanislaus, and Merced Counties, California, June 2014*** is enclosed for your review along with the appendices (enclosure 1). Both a hard copy and electronic copy are provided. In sum, the report presents the environmental and cultural setting of the Proposed SLTP Undertaking and provides the results of a Class I Inventory of previous studies and known cultural resources within the Proposed Project Corridors and Alternative corridors, and a one-quarter mile radius outside of the corridors as defined in the APE.

The report includes six sections as well as a series of appendices. Sections include an introduction to the SLTP, specifically its geographic and regulatory setting; a brief overview of

the environmental setting of the Class I Inventory Study Area; and an outline of the cultural history of the Class I Inventory Study Area. The results of the archival and records search are presented, followed by a discussion of factors likely to influence future field investigations. Maps and tables depicting the locations of known cultural resources and previous cultural resource studies are included as appendices, along with copies of confidential cultural resource records and full or partial copies of previous cultural resource studies (electronic copies only provided). Finally, based on the results of the Class I Inventory, recommendations and conclusions are presented regarding implementation of a Class III field inventory (pedestrian survey) as are maps of recommended field inventory areas. Appendices A, B, and C are bound together in a separate document with enclosure 1 and include:

- **Appendix A:** Maps of known cultural resources and previous cultural resource study locations
- **Appendix B:** Tables of previous cultural resource studies and known cultural resources
- **Appendix C:** Recommended field inventory areas
- **Appendix D:** DPR forms 523 for known cultural resources within the Class I inventory study area (**electronic copy only**)
- **Appendix E:** Reports or report sections for previously conducted studies within the Class I inventory study area (**electronic copy only**)

The Class I Inventory shows that a total of 117 previous cultural resource studies have been undertaken within this proposed Undertaking's APE. The studies encompassed a wide array of investigations, including archival and records search reviews; broad or area-specific effects assessments or environmental impact documents; opportunistic or reconnaissance level surveys involving limited or unsystematic pedestrian survey; "windshield surveys" involving no pedestrian inventory; regional overviews or overview studies focused on particular resource types such as rock art sites or historic period structures; excavation, monitoring, and/or evaluation reports; and studies involving intensive pedestrian inventories, typically conducted in conjunction with archival and records search reviews and/or reconnaissance level surveys. A total of 54 known cultural resources have been formally recorded within the Class I Inventory APE. Those resources include 11 prehistoric sites; seven prehistoric isolated finds; 11 historic period sites; 21 historic period resources encompassing buildings, structures, or objects; two historic period districts; one California Historical Landmark (CHL); and one multi-component resource. Twenty of the 54 known cultural resources within the Class I Inventory Study Area intersect the Proposed Project corridor and 17 intersect the Alternative corridor. In addition to formally recorded cultural resources, six additional resources were noted in previous studies but not formally documented, including two isolated finds, two segments of the Delta-Mendota Canal, one Western Pacific Railroad alignment, a possible historic period foundation, and a possible prehistoric quartzite cobble quarry. All but the isolated finds appeared to intersect the Proposed Project or Alternative corridors. Potential cultural resources were also noted through an examination of historic period maps. Those potential resources include three historic period railroad alignments as well as 36 buildings or structures. Though none of those resources have been formally recorded, at least eight structures and all three railroad segments were noted within the Proposed Project or Alternative corridors and may be encountered during the course of a field inventory.

We are currently in the process of completing a Class III intensive pedestrian survey of the APE and will continue consultation with you regarding the results of the field investigations, NRHP and CRHR recommendations and the potential effects of the SLTP Undertaking on any historic properties and historical resources identified within the APE.

At this time, Western is requesting your comments and or concerns pursuant to §800.4 regarding our definition of the APE for the Proposed SLTP Undertaking and initial efforts to identify known cultural resources and potential historic properties or historical resources for the Proposed SLTP Undertaking.

Although Western is implementing steps to identify historic properties currently known, the exact physical locations of certain components, such as construction staging areas and access roads would not be identified until such time that a Record of Decision and a Notice of Determination for the EIS/EIR is made and pre-construction activities begin. The results of the environmental analysis for all affected resources could potentially have some impact on the current APE. In addition, most of the APE is on private property and Western does not have access to all portions of the proposed and alternative corridors at this time. Western would need to conduct cultural resource surveys as access is (or if is) granted. Final assessment of effects on all historic properties and historical resources would need to be deferred until all project components are finalized. Western would need to implement a phased identification and evaluation approach to fully identify historic properties and historical resources within the Proposed SLTP Undertaking's APE.

Western believes that a Programmatic Agreement (PA) pursuant to §800.4(b)(2) and §800.14(b)(ii)&(v) would be an appropriate procedure to fully implement our Section 106 responsibilities for this Proposed Undertaking and in conjunction with the EIS/EIR. The PA would stipulate Western's responsibilities regarding the level of effort to continue to identify historic properties and historical resources within the APE for the entire Proposed Undertaking, determine the Proposed Undertaking's effect on historic properties and historical resources, and the appropriate mitigation measures to avoid or lessen potential adverse effects to such properties and resources prior to the implementation of the Proposed Undertaking. The PA would also assist with Western's Section 106 responsibilities regarding any current unforeseen engineering design changes or access issues that may require altering the APE as well as stipulating Western's responsibilities under 800.13(a)(1), Post Review Discoveries for the duration of the Proposed Project.

Western would prefer to meet with you regarding the Proposed SLTP Undertaking and discuss our determination of a PA to satisfy our Section 106 responsibilities. Please contact me at our SNR office in Folsom at (916) 353-4035 or email at waldear@wapa.gov.

For more information regarding the proposed project you can visit: <http://sltpeis-eir.com>. Your continued assistance and cooperation are appreciated.

Sincerely,



Cherie Johnston-Waldear
Regional Preservation Official
Sierra Nevada Region

6 Enclosures

cc:

Mr. Steve Tromly
Federal Preservation Officer; CSO, A7400
P.O. Box 281213
Lakewood, CO 80228-8213

Mr. Russell Grimes
US Bureau of Reclamation
2800 Cottage Way, MP-152
Sacramento, CA 95825

Ms. Frances Mizuno
Assistant Executive Director
San Luis & Delta-Mendota Water Authority
15990 Kelso Road
Byron, CA 94514

Appendix I

Air Quality Emission Calculations

Appendix I-1

Air Quality Emission Calculations, Overview and Summary

Appendix I - Air Quality Emission Calculations

AQ-GHG Construction Emissions: Overview and Summary Totals

Emissions by phase and source type from CalEEMod v 2013.2.2

Emissions by phase and source type from CalEEMod v 2013.2.2				Emission Rates		Fugitive	Exhaust	Total	Fugitive	Exhaust	Total	GWP AR4:			25	298		
Proposed Project Source Categories				Phase	Source Type	NOx (ton)	VOC (ton)	PM10 (ton)	PM10 (ton)	PM10 (ton)	PM2.5 (ton)	PM2.5 (ton)	PM2.5 (ton)	CO (ton)	SOx (ton)	CO2 (MT)	CH4 (MT)	N2O (MT)
Year 1 (2018) : Transmission ROW : Subtotal																		
		Site Prep	Off-Road Equipment	1.55	0.08	1.14	0.07	1.21	0.57	0.07	0.64	1.84	0.00	287.4	0.1	0.0	0.0	0.0
		Grading	Off-Road Equipment	3.82	0.19	0.73	0.17	0.91	0.30	0.17	0.48	4.78	0.01	723.4	0.2	0.0	0.0	0.0
		Foundations	Off-Road Equipment	3.16	0.16	0.00	0.16	0.16	0.00	0.16	0.16	3.68	0.01	563.3	0.2	0.0	0.0	0.0
		Structures	Off-Road Equipment	1.29	0.06	0.00	0.08	0.08	0.00	0.08	0.08	1.58	0.00	222.4	0.1	0.0	0.0	0.0
		Site Prep	On-Road Vehicles	0.12	0.01	2.36	0.00	2.36	0.24	0.00	0.24	0.20	0.00	47.9	0.0	0.0	0.0	0.0
		Grading	On-Road Vehicles	0.16	0.02	3.88	0.00	3.88	0.39	0.00	0.40	0.27	0.00	66.8	0.0	0.0	0.0	0.0
		Foundations	On-Road Vehicles	0.54	0.07	10.46	0.01	10.47	1.06	0.01	1.07	0.93	0.00	201.8	0.0	0.0	0.0	0.0
		Structures	On-Road Vehicles	0.31	0.05	7.97	0.01	7.98	0.81	0.00	0.81	0.67	0.00	129.6	0.0	0.0	0.0	0.0
Year 1 (2018) : Substations : Subtotal																		
		Site Prep	Off-Road Equipment	7.20	0.37	1.85	0.31	2.17	1.01	0.31	1.32	8.79	0.01	1,364.2	0.4	0.0	0.0	0.0
		Installation	Off-Road Equipment	6.51	0.33	0.00	0.31	0.31	0.00	0.31	0.31	8.01	0.01	1,188.6	0.3	0.0	0.0	0.0
		Site Prep	On-Road Vehicles	0.61	0.08	0.14	0.01	0.15	0.04	0.01	0.05	1.11	0.00	230.6	0.0	0.0	0.0	0.0
		Installation	On-Road Vehicles	0.84	0.13	0.25	0.01	0.26	0.07	0.01	0.08	1.84	0.00	353.8	0.0	0.0	0.0	0.0
Year 2 (2019) : Transmission ROW : Subtotal																		
		Site Prep	Off-Road Equipment	0.67	0.03	1.14	0.03	1.17	0.57	0.03	0.60	0.79	0.00	122.0	0.0	0.0	0.0	0.0
		Grading	Off-Road Equipment	4.01	0.20	0.73	0.18	0.91	0.30	0.18	0.49	5.01	0.01	747.4	0.2	0.0	0.0	0.0
		Foundations	Off-Road Equipment	3.31	0.17	0.00	0.16	0.16	0.00	0.16	0.16	3.86	0.01	582.8	0.2	0.0	0.0	0.0
		Structures	Off-Road Equipment	1.89	0.09	0.00	0.11	0.11	0.00	0.11	0.11	2.30	0.00	320.9	0.1	0.0	0.0	0.0
		Restoration	Off-Road Equipment	0.47	0.02	0.73	0.02	0.75	0.35	0.02	0.37	0.55	0.00	85.3	0.0	0.0	0.0	0.0
		Stringing	Off-Road Equipment	1.45	0.07	0.00	0.07	0.07	0.00	0.07	0.07	1.68	0.00	263.9	0.1	0.0	0.0	0.0
		Site Prep	On-Road Vehicles	0.05	0.01	1.56	0.00	1.56	0.16	0.00	0.16	0.08	0.00	20.2	0.0	0.0	0.0	0.0
		Grading	On-Road Vehicles	0.16	0.02	3.97	0.00	3.98	0.40	0.00	0.40	0.27	0.00	68.5	0.0	0.0	0.0	0.0
		Foundations	On-Road Vehicles	0.52	0.07	10.74	0.01	10.75	1.09	0.01	1.10	0.90	0.00	207.2	0.0	0.0	0.0	0.0
		Structures	On-Road Vehicles	0.42	0.06	10.58	0.01	10.59	1.07	0.01	1.08	0.89	0.00	184.5	0.0	0.0	0.0	0.0
		Restoration	On-Road Vehicles	0.03	0.00	1.00	0.00	1.00	0.10	0.00	0.10	0.05	0.00	14.1	0.0	0.0	0.0	0.0
		Stringing	On-Road Vehicles	0.21	0.03	5.32	0.00	5.33	0.54	0.00	0.54	0.37	0.00	85.2	0.0	0.0	0.0	0.0
Year 2 (2019) : Substations : Subtotal																		
		Site Prep	Off-Road Equipment	5.17	0.26	1.85	0.23	2.08	1.01	0.23	1.23	6.31	0.01	963.1	0.3	0.0	0.0	0.0
		Installation	Off-Road Equipment	6.54	0.33	0.00	0.31	0.31	0.00	0.31	0.31	8.04	0.01	1,175.7	0.3	0.0	0.0	0.0
		Site Prep	On-Road Vehicles	0.40	0.05	0.11	0.01	0.12	0.03	0.01	0.04	0.73	0.00	161.8	0.0	0.0	0.0	0.0
		Installation	On-Road Vehicles	0.77	0.12	0.25	0.01	0.26	0.07	0.01	0.08	1.70	0.00	346.5	0.0	0.0	0.0	0.0
Year 3 (2020) : Transmission ROW : Subtotal																		
		Restoration	Off-Road Equipment	0.86	0.04	0.73	0.04	0.77	0.35	0.04	0.39	1.02	0.00	154.1	0.0	0.0	0.0	0.0
		Stringing	Off-Road Equipment	2.68	0.14	0.00	0.12	0.12	0.00	0.12	0.12	3.10	0.01	478.2	0.1	0.0	0.0	0.0
		Restoration	On-Road Vehicles	0.05	0.01	1.36	0.00	1.36	0.14	0.00	0.14	0.09	0.00	25.3	0.0	0.0	0.0	0.0
		Stringing	On-Road Vehicles	0.34	0.05	7.40	0.01	7.41	0.75	0.01	0.76	0.64	0.00	153.3	0.0	0.0	0.0	0.0
Helicopters : Subtotal					Aircraft	2.67	3.31	--	0.08	0.08	--	0.08	0.08	4.12	---	1,306.3	0.04	0.04
						NOx	VOC	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	CO	SOx	CO2e		
Total (Full Duration Construction)						58.8	6.6	76.3	2.6	78.8	11.4	2.6	14.0	76.2	0.13	12,929.2	---	---

Proposed Project Source Categories (by calendar year)		Emission Rates		Fugitive	Exhaust	Total	Fugitive	Exhaust	Total				
		NOx (ton)	VOC (ton)	PM10 (ton)	PM10 (ton)	PM10 (ton)	PM2.5 (ton)	PM2.5 (ton)	PM2.5 (ton)			CO (ton)	SOx (ton)
Year 1 (2018)													
	Off-Road Equipment	23.5	1.2	3.7	1.1	4.8	1.9	1.1	3.0	28.7	0.0		
	On-Road Vehicles	2.6	0.4	25.1	0.0	25.1	2.6	0.0	2.6	5.0	0.0		
Year 2 (2019)													
	Off-Road Equipment	23.5	1.2	4.4	1.1	5.6	2.2	1.1	3.3	28.5	0.0		
	On-Road Vehicles	2.5	0.4	33.5	0.0	33.6	3.5	0.0	3.5	5.0	0.0		
Year 3 (2020)													
	Off-Road Equipment	3.5	0.2	0.7	0.2	0.9	0.3	0.2	0.5	4.1	0.0		
	On-Road Vehicles	0.4	0.1	8.8	0.0	8.8	0.9	0.0	0.9	0.7	0.0		
	Aircraft	2.7	3.3	--	0.1	0.1	--	0.1	0.1	4.1	---		

Emissions by year from CalEEMod v 2013.2.2															
Proposed Project Activity Subtotals		Emission Rates		Fugitive	Exhaust	Total	Fugitive	Exhaust	Total						
		NOx (ton)	VOC (ton)	PM10 (ton)	PM10 (ton)	PM10 (ton)	PM2.5 (ton)	PM2.5 (ton)	PM2.5 (ton)						
	Year 1 (2018) : Transmission ROW : Subtotal	10.96	0.64	26.54	0.50	27.04	3.37	0.50	3.87	13.94	0.03	2,242.7	0.5	0.0	
	Year 1 (2018) : Substations : Subtotal	15.17	0.91	2.24	0.65	2.89	1.11	0.65	1.76	19.75	0.04	3,137.3	0.8	0.0	
	Year 2 (2019) : Transmission ROW : Subtotal	13.18	0.78	35.78	0.60	36.38	4.58	0.60	5.18	16.77	0.03	2,701.9	0.6	0.0	
	Year 2 (2019) : Substations : Subtotal	12.87	0.77	2.21	0.56	2.77	1.10	0.56	1.66	16.78	0.03	2,647.1	0.7	0.0	
	Year 3 (2020) : Transmission ROW : Subtotal	3.93	0.23	9.49	0.17	9.66	1.24	0.17	1.41	4.86	0.01	810.9	0.2	0.0	
	Helicopters : Subtotal	2.67	3.31	--	0.08	0.08	--	0.08	0.08	4.12	---	1,306.3	0.04	0.04	

Proposed Project Subtotals (by calendar year)		Emission Rates		Fugitive	Exhaust	Total	Fugitive	Exhaust	Total						
		NOx (ton)	VOC (ton)	PM10 (ton)	PM10 (ton)	PM10 (ton)	PM2.5 (ton)	PM2.5 (ton)	PM2.5 (ton)						
	Year 1 : Subtotal	26.1	1.6	28.8	1.1	29.9	4.5	1.1	5.6	33.7	0.06	5,412.6			
	Year 2 : Subtotal	26.0	1.5	38.0	1.2	39.1	5.7	1.2	6.8	33.6	0.06	5,381.0			
	Year 3 : Subtotal	6.6	3.5	9.5	0.3	9.7	1.2	0.3	1.5	9.0	0.01	2,135.6			

Proposed Project Activity Subtotals		Emission Rates		Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	CO	SOx	CO2	CH4	N2O
		NOx	VOC	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	CO	SOx	CO2	CH4	N2O
	Transmission ROW : Subtotal	28.1	1.6	71.8	1.3	73.1	9.2	1.3	10.5	35.6	0.07	5,755.5	1.3	0.0
	Substations : Subtotal	28.0	1.7	4.5	1.2	5.7	2.2	1.2	3.4	36.5	0.07	5,784.3	1.4	0.0
	Helicopters : Subtotal	2.7	3.3	---	0.1	0.1	---	0.1	0.1	4.1	---	1,306.3	0.04	0.04
Total (Full Duration Construction)		58.8	6.6	76.3	2.6	78.8	11.4	2.6	14.0	76.2	0.13	12,929.2		

Proposed Project, General Conformity Applicability

	NOx (tpy)	VOC (tpy)	PM10 (tpy)	PM2.5 (tpy)
General Conformity Threshold for San Joaquin Valley Air Basin	10.0	10.0	100.0	100.0
Potential to exceed General Conformity de minimis threshold?				
Year 1 (2018)	yes	no	no	no
Year 2 (2019)	yes	no	no	no
Year 3 (2020)	no	no	no	no
Emissions Reductions necessary for No Net Increase (tons)	58.8	---	---	---

Proposed Project, CEQA Threshold of Significance for Construction

	NOx (tpy)	VOC (tpy)	PM10 (tpy)	PM2.5 (tpy)	CO (tpy)	SOx (tpy)
San Joaquin Valley CEQA Threshold of Significance	10.0	10.0	15.0	15.0	100.0	27.0
Potential to exceed threshold of significance?						
Year 1 (2018)	yes	no	yes	no	no	no
Year 2 (2019)	yes	no	yes	no	no	no
Year 3 (2020)	no	no	no	no	no	no
Emissions Reductions necessary for No Net Increase (tons)	58.8	---	78.8	---	---	---

Proposed Project Activity (BAAQMD Portion)

<u>(in BAAQMD)</u>	<u>(fraction)</u>		NOx (ton)	VOC (ton)	Fugitive (ton)	Exhaust (ton)	PM10 (ton)	Fugitive (ton)	Exhaust (ton)	PM2.5 (ton)	CO (ton)	SOx (ton)	CO2 (MT)	CH4 (MT)	N2O (MT)
3.5 mi of ROW	0.04	Transmission ROW : (BAAQMD)	1.0	0.1	2.6	0.0	2.7	0.3	0.0	0.4	1.3	0.00	212.0	0.0	0.0
1 new 500-kV Substation	0.5	Substations : (BAAQMD)	14.0	0.8	2.2	0.6	2.8	1.1	0.6	1.7	18.3	0.03	2,892.2	0.7	0.0
3.5 mi of ROW	0.04	Helicopters : (BAAQMD)	0.1	0.1	---	0.0	0.0	---	0.0	0.0	0.2	---	48.1	0.00	0.00
													CO2e		
		Subtotal (BAAQMD Portion)	15.2	1.0	4.9	0.7	5.5	1.4	0.7	2.1	19.7	0.04	3,172.1	---	---

Proposed Project Activity (SJVAPCD Portion)

<u>(in SJVAPCD)</u>	<u>(fraction)</u>		NOx (ton)	VOC (ton)	Fugitive (ton)	Exhaust (ton)	PM10 (ton)	Fugitive (ton)	Exhaust (ton)	PM2.5 (ton)	CO (ton)	SOx (ton)	CO2 (MT)	CH4 (MT)	N2O (MT)
91.5 mi of ROW	0.96	Transmission ROW : (SJVAPCD)	27.0	1.6	69.2	1.2	70.4	8.9	1.2	10.1	34.3	0.06	5,543.5	1.3	0.0
1 new 500-kV Substation	0.5	Substations : (SJVAPCD)	14.0	0.8	2.2	0.6	2.8	1.1	0.6	1.7	18.3	0.03	2,892.2	0.7	0.0
91.5 mi of ROW	0.96	Helicopters : (SJVAPCD)	2.6	3.2	---	0.1	0.1	---	0.1	0.1	4.0	---	1,258.2	0.04	0.04
													CO2e		
		Subtotal (SJVAPCD Portion)	43.6	5.6	71.4	1.9	73.3	10.0	1.9	11.9	56.5	0.10	9,757.1	---	---

Proposed Project, with mitigation, example with partial construction fleet of Tier 4 equipment

Proposed Project Activity Subtotals (example of partial Tier 4 fleet mix including: loaders/backhoes, excavators, dozers, off-highway trucks, generator sets, and forklifts)

For Impact AQ-1 and MM AQ-1

<u>(NOx/ROG/PM control at Tier 3)</u>	<u>(NOx/PM control w Tier 4 mix)</u>		NOx (ton)	VOC (ton)	Fugitive (ton)	Exhaust (ton)	PM10 (ton)	Fugitive (ton)	Exhaust (ton)	PM2.5 (ton)	CO (ton)	SOx (ton)
39%	70%	Transmission ROW : Subtotal	13.8	1.6	71.8	0.6	72.4	9.2	0.6	9.8	35.6	0.07
39%	70%	Substations : Subtotal	13.8	1.7	4.5	0.6	5.0	2.2	0.6	2.8	36.5	0.07
---	---	Helicopters : Subtotal	2.7	3.3	---	0.1	0.1	---	0.1	0.1	4.1	---
		Total (partial Tier 4 fleet)	30.3	6.6	76.3	1.3	77.6	11.4	1.3	12.7	76.2	0.1

Proposed Project, screening for Ambient Air Quality Analysis (AAQA) applicability due to new 500-kV Substation (in SJVAPCD)

For Impact AQ-3 & Impact AQ-4

	NOx (ton)	VOC (ton)	Fugitive (ton)	Exhaust (ton)	PM10 (ton)	Fugitive (ton)	Exhaust (ton)	PM2.5 (ton)	CO (ton)	SOx (ton)
Substations : (SJVAPCD)	14.0	0.8	2.2	0.6	2.8	1.1	0.6	1.7	18.3	0.0
Substation construction (New Los Banos West 500 kV)	NOx (lb/d)	VOC (lb/d)	Fugitive (lb/d)	Exhaust (lb/d)	PM10 (lb/d)	Fugitive (lb/d)	Exhaust (lb/d)	PM2.5 (lb/d)	CO (lb/d)	SOx (lb/d)
525 days duration	53.4	3.2	8.5	2.3	10.8	4.2	2.3	6.5	69.6	0.13
Potential to exceed (lb/day)?	100 no	100 no			100 no			100 no	100 no	100 no

Alternatives, Construction Activity

Patterson Pass Road Corridor Alternative

<u>(incremental to Project)</u>	<u>(added/Proj)</u>		NOx (ton)	VOC (ton)	Fugitive (ton)	Exhaust (ton)	PM10 (ton)	Fugitive (ton)	Exhaust (ton)	PM2.5 (ton)	CO (ton)	SOx (ton)	CO2 (MT)	CH4 (MT)	N2O (MT)
9 mi of add'l ROW or roads	0.095	Transmission ROW : Subtotal	2.7	0.2	6.8	0.1	6.9	0.9	0.1	1.0	3.4	0.01	545.3	0.1	0.0
0 add'l Substations	0	Substations : Subtotal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.0	0.0	0.0
9 mi of add'l ROW or roads	0.095	Helicopters : Subtotal	0.3	0.3	---	0.0	0.0	---	0.0	0.0	0.4	---	123.8	0.00	0.00
Additional to Proposed Project (Patterson Pass Road Alternative)			2.9	0.5	6.8	0.1	6.9	0.9	0.1	1.0	3.8	0.01	673.5	---	---

Butts Road Corridor Alternative

<u>(incremental to Project)</u>	<u>(added/Proj)</u>		NOx (ton)	VOC (ton)	Fugitive (ton)	Exhaust (ton)	PM10 (ton)	Fugitive (ton)	Exhaust (ton)	PM2.5 (ton)	CO (ton)	SOx (ton)	CO2 (MT)	CH4 (MT)	N2O (MT)
2 mi of add'l ROW or roads	0.021	Transmission ROW : Subtotal	0.6	0.0	1.5	0.0	1.5	0.2	0.0	0.2	0.7	0.00	121.2	0.0	0.0
0 add'l Substations	0	Substations : Subtotal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.0	0.0	0.0
2 mi of add'l ROW or roads	0.021	Helicopters : Subtotal	0.1	0.1	---	0.0	0.0	---	0.0	0.0	0.1	---	27.5	0.00	0.00
Additional to Proposed Project (Butts Road Alternative)			0.6	0.1	1.5	0.0	1.5	0.2	0.0	0.2	0.8	0.00	149.7	---	---

West of Cemetery Corridor Alternative

<u>(incremental to Project)</u>	<u>(added/Proj)</u>		NOx (ton)	VOC (ton)	Fugitive (ton)	Exhaust (ton)	PM10 (ton)	Fugitive (ton)	Exhaust (ton)	PM2.5 (ton)	CO (ton)	SOx (ton)	CO2 (MT)	CH4 (MT)	N2O (MT)
9 mi of add'l ROW or roads	0.095	Transmission ROW : Subtotal	2.7	0.2	6.8	0.1	6.9	0.9	0.1	1.0	3.4	0.01	545.3	0.1	0.0
0 add'l Substations	0	Substations : Subtotal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.0	0.0	0.0
9 mi of add'l ROW or roads	0.095	Helicopters : Subtotal	0.3	0.3	---	0.0	0.0	---	0.0	0.0	0.4	---	123.8	0.00	0.00
Additional to Proposed Project (West of Cemetery Alternative)			2.9	0.5	6.8	0.1	6.9	0.9	0.1	1.0	3.8	0.01	673.5	---	---

Billy Wright Road Corridor Alternative

<u>(incremental to Project)</u>	<u>(added/Proj)</u>		NOx (ton)	VOC (ton)	Fugitive (ton)	Exhaust (ton)	PM10 (ton)	Fugitive (ton)	Exhaust (ton)	PM2.5 (ton)	CO (ton)	SOx (ton)	CO2 (MT)	CH4 (MT)	N2O (MT)
3 mi of add'l ROW or roads	0.032	Transmission ROW : Subtotal	0.9	0.1	2.3	0.0	2.3	0.3	0.0	0.3	1.1	0.00	181.8	0.0	0.0
0 add'l Substations	0	Substations : Subtotal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.0	0.0	0.0
3 mi of add'l ROW or roads	0.032	Helicopters : Subtotal	0.1	0.1	---	0.0	0.0	---	0.0	0.0	0.1	---	41.3	0.00	0.00
Additional to Proposed Project (Billy Wright Road Alternative)			1.0	0.2	2.3	0.0	2.3	0.3	0.0	0.3	1.3	0.00	224.5	---	---

Agency Preferred Alternative

	NOx (ton)	VOC (ton)	Fugitive (ton)	Exhaust (ton)	PM10 (ton)	Fugitive (ton)	Exhaust (ton)	PM2.5 (ton)	CO (ton)	SOx (ton)	CO2e
Proposed Project Total (Full Duration Construction)	58.8	6.6	76.3	2.6	78.8	11.4	2.6	14.0	76.2	0.13	12,929.2
Additional to Proposed Project (Billy Wright Road Alternative)	1.0	0.2	2.3	0.0	2.3	0.3	0.0	0.3	1.3	0.00	224.5
Agency Preferred Alternative Total (Full Duration Construction)	59.7	6.8	78.5	2.6	81.1	11.7	2.6	14.3	77.5	0.13	13,153.7

		NOx	VOC	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	CO	SOx	CO2	CH4	N2O
		(ton)	(ton)	(ton)	(ton)	(ton)	(ton)	(ton)	(ton)	(ton)	(ton)	(MT)	(MT)	(MT)
	<u>(incremental to Project)</u>	<u>(added/Proj)</u>												
	0 mi of additional ROW	0.000												
	Transmission ROW : Subtotal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.0	0.0	0.0
	Substations : Subtotal	-25.2	-1.5	-4.0	-1.1	-5.1	-2.0	-1.1	-3.1	-32.9	-0.06	-5,205.9	-1.3	0.0
	0 mi of additional ROW	0.000												
	Helicopters : Subtotal	0.0	0.0	---	0.0	0.0	---	0.0	0.0	0.0	---	0.0	0.00	0.00
												CO2e		
	Reduction from Proposed Project (230-kV Design Option)	-25.2	-1.5	-4.0	-1.1	-5.1	-2.0	-1.1	-3.1	-32.9	-0.06	-5,238.4	---	---

Supporting Details : Subtotal AQ-GHG : Construction Helicopter Activity

Helicopters / Aircraft Emissions Calculations

	Count	Power	Mean Op.	Mean Op.	Fuel Use per #			NOx	HCS	Exhaust	Exhaust	CO	SOx	CO2	CH4	N2O
	(# units)	(hp)	(%) Power	(hp)	(kg f/sec)	(kg f/hr)	(gal/hr)	(g/kg f)	(g/kg f)	PM10	PM2.5	(g/kg f)	(g/kg f)	(kg/gal)	(kg/gal)	(kg/gal)
Hughes/MD500 (SHP < 600)	1	420	0.80	336	3.119E-02	112.3	36.4	5.74	7.13	0.18	0.18	8.88	---	9.57	0.00027	0.00031
					Emission Rates			NOx	HCS	PM10	PM2.5	CO		CO2	CH4	N2O
								(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	---	(lb/hr)	(lb/hr)	(lb/hr)
					Hughes/MD500 (SHP < 600)			1.42	1.77	0.04	0.04	2.20	---	767.97	0.02	0.02
		Overall Use/Activity				in service		NOx	HCS	PM10	PM2.5	CO		CO2	CH4	N2O
			375 days			(hr per #)		(ton)	(ton)	(ton)	(ton)	(ton)	---	(MT)	(MT)	(MT)
			10 hr/day		Helicopters : Subtotal		3750	2.7	3.3	0.1	0.1	4.1	---	1,306.3	0.0369	0.0423

Ref: Swiss Confederation, DETEC and FOCA "Guidance on the Determination of Helicopter Emissions", 2009

GHG Factors: <http://www.eia.gov/oiaf/1605/coefficients.html>

Jet fuel : 6.8 lb/gal

Appendix I - CalEEMod Output Copy and Results

Results (Consolidated)

Dated: 12-17-2015

Operational Phase

ROW Operation

Category	tons/yr	NOx	ROG	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	CO	SO2	Total CO2	CH4	N2O	CO2e
												MT/yr			MT/yr
Area		0.0005	4.4096		2.00E-04	2.00E-04		2.00E-04	2.00E-04	0.0555	0	0.1	0.00	0	0.1
Energy		0	0		0	0		0	0	0	0	0.0	0.00	0	0.0
Mobile		0.1606	0.0441	4.4122	3.03E-03	4.4152	0.4537	2.79E-03	0.4565	0.555	1.56E-03	113.3	0.00	0	113.4
Offroad		2.2259	0.2365		0.0897	0.0897		0.0825	0.0825	2.0232	5.07E-03	445.0	0.14	0	448.1
Waste					0	0		0	0			0.0	0.00	0	0.0
Water					0	0		0	0			0.0	0.00	0	0.0
Total		2.3871	4.6901	4.4122	0.093	4.5052	0.4537	0.0855	0.5393	2.6337	6.63E-03	558.5	0.15	0	561.6

Substations Operation

Category	tons/yr	NOx	ROG	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	CO	SO2	Total CO2	CH4	N2O	CO2e
												MT/yr			MT/yr
Area		3.40E-04	2.9305		1.30E-04	1.30E-04		1.30E-04	1.30E-04	0.0369	0	0.1	0.00	0	0.1
Energy		0	0		0	0		0	0	0	0	0.0	0.00	0	0.0
Mobile		0.1068	0.0293	0.0588	2.01E-03	0.0608	0.0158	1.86E-03	0.0177	0.3688	1.04E-03	75.3	0.00	0	75.4
Waste					0	0		0	0			0.0	0.00	0	0.0
Water					0	0		0	0			0.0	0.00	0	0.0
Total		0.1071	2.9598	0.0588	2.14E-03	0.0609	0.0158	1.99E-03	0.0178	0.4057	1.04E-03	75.4	0.00	0	75.4

Construction Phase

ROW Construction

Year	tons/yr	NOx	ROG	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	CO	SO2	Total CO2	CH4	N2O	CO2e
												MT/yr			MT/yr
2018		10.9592	0.6443	26.5442	0.4976	27.0419	3.3748	0.4961	3.8709	13.9421	0.0254	2,242.7	0.52	0	2,253.7
2019		13.1761	0.7755	35.7757	0.6006	36.3763	4.5841	0.5987	5.1828	16.7726	0.0312	2,701.9	0.62	0	2,714.9
2020		3.9307	0.23	9.4889	0.1711	9.66	1.236	0.1705	1.4065	4.8621	9.50E-03	810.9	0.19	0	815.0
Total		28.0659	1.6498	71.8088	1.2694	73.0782	9.1949	1.2653	10.4602	35.5767	0.066	5,755.5	1.34	0	5,783.6

Substations Construction

Year	tons/yr	NOx	ROG	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	CO	SO2	Total CO2	CH4	N2O	CO2e
												MT/yr			MT/yr
2018		15.1673	0.9115	2.2387	0.6485	2.8871	1.1112	0.6466	1.7578	19.7498	0.0354	3,137.3	0.78	0	3,153.7
2019		12.8722	0.7667	2.2122	0.5573	2.7695	1.1039	0.5557	1.6596	16.7838	0.0304	2,647.1	0.66	0	2,660.9
Total		28.0395	1.6782	4.4508	1.2058	5.6566	2.2151	1.2023	3.4174	36.5336	0.0658	5,784.3	1.44	0	5,814.7

ROW Construction Details															
3.2 Site Preparation - 2018															
Mitigated Construction On-Site															
		NOx	ROG	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	CO	SO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr														
Fugitive Dust				1.1351	0	1.1351	0.5714	0	0.5714			0.0	0.00	0	0.0
Off-Road		1.5479	0.0765		0.0733	0.0733		0.0733	0.0733	1.8391	3.14E-03	287.4	0.09	0	289.2
Total		1.5479	0.0765	1.1351	0.0733	1.2084	0.5714	0.0733	0.6448	1.8391	3.14E-03	287.4	0.09	0	289.2
Mitigated Construction Off-Site															
		NOx	ROG	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	CO	SO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr														
Hauling		0.1093	0.0103	0.958	1.84E-03	0.9598	0.0972	1.69E-03	0.0989	0.1262	3.90E-04	34.5	0.00	0	34.5
Vendor		0	0	0	0	0	0	0	0	0	0	0.0	0.00	0	0.0
Worker		7.38E-03	4.35E-03	1.4045	1.10E-04	1.4046	0.1422	1.00E-04	0.1423	0.0702	1.90E-04	13.4	0.00	0	13.4
Total		0.1167	0.0146	2.3624	1.95E-03	2.3644	0.2394	1.79E-03	0.2412	0.1964	5.80E-04	47.9	0.00	0	47.9
3.2 Site Preparation - 2019															
Mitigated Construction On-Site															
		NOx	ROG	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	CO	SO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr														
Fugitive Dust				1.1351	0	1.1351	0.5714	0	0.5714			0.0	0.00	0	0.0
Off-Road		0.6676	0.033		0.0316	0.0316		0.0316	0.0316	0.7932	1.36E-03	122.0	0.04	0	122.8
Total		0.6676	0.033	1.1351	0.0316	1.1667	0.5714	0.0316	0.6031	0.7932	1.36E-03	122.0	0.04	0	122.8
Mitigated Construction Off-Site															
		NOx	ROG	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	CO	SO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr														
Hauling		0.043	4.05E-03	0.9567	7.80E-04	0.9575	0.0967	7.10E-04	0.0974	0.0512	1.70E-04	14.6	0.00	0	14.6
Vendor		0	0	0	0	0	0	0	0	0	0	0.0	0.00	0	0.0
Worker		2.88E-03	1.68E-03	0.6057	5.00E-05	0.6058	0.0613	4.00E-05	0.0614	0.0273	8.00E-05	5.6	0.00	0	5.6
Total		0.0459	5.73E-03	1.5624	8.30E-04	1.5633	0.158	7.50E-04	0.1588	0.0785	2.50E-04	20.2	0.00	0	20.2
3.3 Grading - 2018															
Mitigated Construction On-Site															
		NOx	ROG	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	CO	SO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr														
Fugitive Dust				0.7318	0	0.7318	0.3035	0	0.3035			0.0	0.00	0	0.0
Off-Road		3.8235	0.1926		0.1734	0.1734		0.1734	0.1734	4.7791	7.97E-03	723.4	0.21	0	727.9
Total		3.8235	0.1926	0.7318	0.1734	0.9052	0.3035	0.1734	0.4769	4.7791	7.97E-03	723.4	0.21	0	727.9
Mitigated Construction Off-Site															
		NOx	ROG	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	CO	SO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr														
Hauling		0.1527	0.0144	1.9146	2.56E-03	1.9172	0.1938	2.36E-03	0.1962	0.1762	5.40E-04	48.2	0.00	0	48.2
Vendor		0	0	0	0	0	0	0	0	0	0	0.0	0.00	0	0.0
Worker		0.0103	6.07E-03	1.9619	1.60E-04	1.9621	0.1987	1.50E-04	0.1988	0.0981	2.70E-04	18.7	0.00	0	18.7
Total		0.163	0.0204	3.8766	2.72E-03	3.8793	0.3925	2.51E-03	0.395	0.2743	8.10E-04	66.8	0.00	0	66.9
3.3 Grading - 2019															
Mitigated Construction On-Site															
		NOx	ROG	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	CO	SO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr														
Fugitive Dust				0.7318	0	0.7318	0.3035	0	0.3035			0.0	0.00	0	0.0
Off-Road		4.0115	0.2021		0.1819	0.1819		0.1819	0.1819	5.0141	8.35E-03	747.4	0.22	0	752.1
Total		4.0115	0.2021	0.7318	0.1819	0.9137	0.3035	0.1819	0.4854	5.0141	8.35E-03	747.4	0.22	0	752.1

Mitigated Construction Off-Site

Category	tons/yr	NOx	ROG	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	CO	SO2	Total CO2	CH4	N2O	CO2e
Hauling		0.146	0.0138	1.9148	2.64E-03	1.9174	0.1939	2.43E-03	0.1963	0.174	5.70E-04	49.6	0.00	0	49.7
Vendor		0	0	0	0	0	0	0	0	0	0	0.0	0.00	0	0.0
Worker		9.80E-03	5.70E-03	2.0584	1.60E-04	2.0586	0.2085	1.50E-04	0.2086	0.0929	2.90E-04	18.9	0.00	0	18.9
Total		0.1558	0.0195	3.9732	2.80E-03	3.976	0.4024	2.58E-03	0.4049	0.2668	8.60E-04	68.5	0.00	0	68.6

3.4 Foundation Construction - 2018

Mitigated Construction On-Site

Category	tons/yr	NOx	ROG	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	CO	SO2	Total CO2	CH4	N2O	CO2e
Off-Road		3.1589	0.1594		0.1566	0.1566		0.1566	0.1566	3.6804	6.30E-03	563.3	0.16	0	566.7
Total		3.1589	0.1594		0.1566	0.1566		0.1566	0.1566	3.6804	6.30E-03	563.3	0.16	0	566.7

Mitigated Construction Off-Site

Category	tons/yr	NOx	ROG	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	CO	SO2	Total CO2	CH4	N2O	CO2e
Hauling		0.3818	0.0359	4.7866	6.41E-03	4.793	0.4846	5.90E-03	0.4905	0.4406	1.36E-03	120.4	0.00	0	120.4
Vendor		0.1345	0.0186	0.7726	2.24E-03	0.7748	0.0788	2.06E-03	0.0808	0.2443	3.90E-04	34.7	0.00	0	34.7
Worker		0.0258	0.0152	4.9048	3.90E-04	4.9052	0.4967	3.60E-04	0.4971	0.2452	6.80E-04	46.7	0.00	0	46.8
Total		0.5421	0.0697	10.464	9.04E-03	10.473	1.0601	8.32E-03	1.0684	0.9301	2.43E-03	201.8	0.00	0	201.9

3.4 Foundation Construction - 2019

Mitigated Construction On-Site

Category	tons/yr	NOx	ROG	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	CO	SO2	Total CO2	CH4	N2O	CO2e
Off-Road		3.3142	0.1673		0.1643	0.1643		0.1643	0.1643	3.8614	6.60E-03	582.8	0.17	0	586.3
Total		3.3142	0.1673		0.1643	0.1643		0.1643	0.1643	3.8614	6.60E-03	582.8	0.17	0	586.3

Mitigated Construction Off-Site

Category	tons/yr	NOx	ROG	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	CO	SO2	Total CO2	CH4	N2O	CO2e
Hauling		0.3651	0.0345	4.787	6.59E-03	4.7935	0.4848	6.06E-03	0.4908	0.4349	1.42E-03	124.1	0.00	0	124.1
Vendor		0.128	0.0172	0.8106	2.16E-03	0.8128	0.0826	1.98E-03	0.0846	0.237	4.10E-04	35.8	0.00	0	35.8
Worker		0.0245	0.0143	5.1461	4.10E-04	5.1465	0.5212	3.80E-04	0.5215	0.2321	7.10E-04	47.2	0.00	0	47.3
Total		0.5175	0.0659	10.7436	9.16E-03	10.7528	1.0886	8.42E-03	1.097	0.904	2.54E-03	207.2	0.00	0	207.2

3.5 Structure Assembly - 2018

Mitigated Construction On-Site

Category	tons/yr	NOx	ROG	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	CO	SO2	Total CO2	CH4	N2O	CO2e
Off-Road		1.2941	0.063		0.0754	0.0754		0.0754	0.0754	1.577	2.52E-03	222.4	0.05	0	223.6
Total		1.2941	0.063		0.0754	0.0754		0.0754	0.0754	1.577	2.52E-03	222.4	0.05	0	223.6

Mitigated Construction Off-Site

Category	tons/yr	NOx	ROG	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	CO	SO2	Total CO2	CH4	N2O	CO2e
Hauling		0.1527	0.0144	2.2969	2.56E-03	2.2995	0.2324	2.36E-03	0.2347	0.1762	5.40E-04	48.2	0.00	0	48.2
Vendor		0.1345	0.0186	0.7726	2.24E-03	0.7748	0.0788	2.06E-03	0.0808	0.2443	3.90E-04	34.7	0.00	0	34.7
Worker		0.0258	0.0152	4.9048	3.90E-04	4.9052	0.4967	3.60E-04	0.4971	0.2452	6.80E-04	46.7	0.00	0	46.8
Total		0.313	0.0481	7.9744	5.19E-03	7.9796	0.8079	4.78E-03	0.8127	0.6658	1.61E-03	129.6	0.00	0	129.7

3.5 Structure Assembly - 2019

Mitigated Construction On-Site

Category	tons/yr	NOx	ROG	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	CO	SO2	Total CO2	CH4	N2O	CO2e
Off-Road		1.8881	0.0919		0.11	0.11		0.11	0.11	2.3008	3.67E-03	320.9	0.08	0	322.5
Total		1.8881	0.0919		0.11	0.11		0.11	0.11	2.3008	3.67E-03	320.9	0.08	0	322.5

Mitigated Construction Off-Site

Category	tons/yr	NOx	ROG	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	CO	SO2	Total CO2	CH4	N2O	CO2e
Hauling		0.2031	0.0192	2.2984	3.67E-03	2.302	0.2329	3.37E-03	0.2363	0.2419	7.90E-04	69.0	0.00	0	69.1
Vendor		0.178	0.0239	1.1272	3.00E-03	1.1302	0.1149	2.76E-03	0.1177	0.3296	5.70E-04	49.8	0.00	0	49.8
Worker		0.0341	0.0198	7.1562	5.60E-04	7.1568	0.7247	5.20E-04	0.7253	0.3228	9.90E-04	65.7	0.00	0	65.8
Total		0.4151	0.0629	10.5818	7.23E-03	10.5891	1.0726	6.65E-03	1.0792	0.8943	2.35E-03	184.5	0.00	0	184.6

3.6 Restoration - 2019

Mitigated Construction On-Site

Category	tons/yr	NOx	ROG	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	CO	SO2	Total CO2	CH4	N2O	CO2e
Fugitive Dust				0.7286	0	0.7286	0.348	0	0.348			0.0	0.00	0	0.0
Off-Road		0.4667	0.0231		0.0221	0.0221		0.0221	0.0221	0.5545	9.50E-04	85.3	0.03	0	85.8
Total		0.4667	0.0231	0.7286	0.0221	0.7507	0.348	0.0221	0.3701	0.5545	9.50E-04	85.3	0.03	0	85.8

Mitigated Construction Off-Site

Category	tons/yr	NOx	ROG	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	CO	SO2	Total CO2	CH4	N2O	CO2e
Hauling		0.03	2.83E-03	0.5741	5.40E-04	0.5747	0.0581	5.00E-04	0.0586	0.0358	1.20E-04	10.2	0.00	0	10.2
Vendor		0	0	0	0	0	0	0	0	0	0	0.0	0.00	0	0.0
Worker		2.02E-03	1.17E-03	0.4235	3.00E-05	0.4235	0.0429	3.00E-05	0.0429	0.0191	6.00E-05	3.9	0.00	0	3.9
Total		0.0321	4.00E-03	0.9976	5.70E-04	0.9982	0.101	5.30E-04	0.1015	0.0549	1.80E-04	14.1	0.00	0	14.1

3.6 Restoration - 2020

Mitigated Construction On-Site

Category	tons/yr	NOx	ROG	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	CO	SO2	Total CO2	CH4	N2O	CO2e
Fugitive Dust				0.7286	0	0.7286	0.348	0	0.348			0.0	0.00	0	0.0
Off-Road		0.8626	0.0426		0.0409	0.0409		0.0409	0.0409	1.0248	1.75E-03	154.1	0.05	0	155.2
Total		0.8626	0.0426	0.7286	0.0409	0.7694	0.348	0.0409	0.3889	1.0248	1.75E-03	154.1	0.05	0	155.2

Mitigated Construction Off-Site

Category	tons/yr	NOx	ROG	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	CO	SO2	Total CO2	CH4	N2O	CO2e
Hauling		0.048	4.80E-03	0.5747	9.80E-04	0.5757	0.0583	9.10E-04	0.0592	0.0624	2.20E-04	18.4	0.00	0	18.4
Vendor		0	0	0	0	0	0	0	0	0	0	0.0	0.00	0	0.0
Worker		3.42E-03	1.99E-03	0.7826	6.00E-05	0.7827	0.0793	6.00E-05	0.0793	0.0324	1.10E-04	6.9	0.00	0	6.9
Total		0.0514	6.79E-03	1.3573	1.04E-03	1.3584	0.1375	9.70E-04	0.1385	0.0948	3.30E-04	25.3	0.00	0	25.3

3.7 Conductor Stringing - 2019

Mitigated Construction On-Site

Category	tons/yr	NOx	ROG	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	CO	SO2	Total CO2	CH4	N2O	CO2e
Off-Road		1.4486	0.0732		0.0663	0.0663		0.0663	0.0663	1.6782	2.97E-03	263.9	0.08	0	265.5
Total		1.4486	0.0732		0.0663	0.0663		0.0663	0.0663	1.6782	2.97E-03	263.9	0.08	0	265.5

Mitigated Construction Off-Site

Category	tons/yr	NOx	ROG	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	CO	SO2	Total CO2	CH4	N2O	CO2e
Hauling		0.1502	0.0142	2.8706	2.71E-03	2.8733	0.2903	2.50E-03	0.2928	0.1789	5.90E-04	51.1	0.00	0	51.1
Vendor		0.0527	7.06E-03	0.3335	8.90E-04	0.3344	0.034	8.20E-04	0.0348	0.0975	1.70E-04	14.7	0.00	0	14.7

Worker	0.0101	5.86E-03	2.1174	1.70E-04	2.1176	0.2144	1.50E-04	0.2146	0.0955	2.90E-04	19.4	0.00	0	19.5
Total	0.2129	0.0271	5.3215	3.77E-03	5.3253	0.5387	3.47E-03	0.5422	0.372	1.05E-03	85.2	0.00	0	85.3

3.7 Conductor Stringing - 2020

Mitigated Construction On-Site

Category	tons/yr	NOx	ROG	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	CO	SO2	Total CO2	CH4	N2O	CO2e
Off-Road	2.6772		0.1353		0.1225	0.1225		0.1225	0.1225	3.1014	5.48E-03	478.2	0.14	0	481.1
Total	2.6772		0.1353		0.1225	0.1225		0.1225	0.1225	3.1014	5.48E-03	478.2	0.14	0	481.1

Mitigated Construction Off-Site

Category	tons/yr	NOx	ROG	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	CO	SO2	Total CO2	CH4	N2O	CO2e
Hauling	0.2401		0.024	2.8735	4.92E-03	2.8784	0.2913	4.53E-03	0.2959	0.3121	1.08E-03	92.2	0.00	0	92.2
Vendor	0.0823		0.0113	0.6164	1.44E-03	0.6178	0.0628	1.32E-03	0.0642	0.1668	3.10E-04	26.6	0.00	0	26.6
Worker	0.0171		9.94E-03	3.9132	3.10E-04	3.9135	0.3963	2.80E-04	0.3966	0.162	5.40E-04	34.5	0.00	0	34.5
Total	0.3395		0.0453	7.403	6.67E-03	7.4097	0.7505	6.13E-03	0.7566	0.641	1.93E-03	153.3	0.00	0	153.3

Substation Construction Details

3.2 Site Preparation - 2018

Mitigated Construction On-Site

Category	tons/yr	NOx	ROG	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	CO	SO2	Total CO2	CH4	N2O	CO2e
Fugitive Dust				1.8531	0	1.8531	1.0081	0	1.0081			0.0	0.00	0	0.0
Off-Road	7.2038		0.3654		0.3136	0.3136		0.3136	0.3136	8.7904	0.0149	1,364.2	0.42	0	1,373.1
Total	7.2038		0.3654	1.8531	0.3136	2.1666	1.0081	0.3136	1.3216	8.7904	0.0149	1,364.2	0.42	0	1,373.1

Mitigated Construction Off-Site

Category	tons/yr	NOx	ROG	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	CO	SO2	Total CO2	CH4	N2O	CO2e
Hauling	0.3826		0.0359	0.0482	6.42E-03	0.0547	0.0128	5.91E-03	0.0187	0.4416	1.36E-03	120.7	0.00	0	120.7
Vendor	0.1926		0.0266	0.0154	3.21E-03	0.0186	4.42E-03	2.95E-03	7.37E-03	0.3498	5.70E-04	49.7	0.00	0	49.7
Worker	0.0332		0.0196	0.0733	5.10E-04	0.0738	0.0195	4.70E-04	0.0199	0.316	8.80E-04	60.2	0.00	0	60.3
Total	0.6085		0.0821	0.1369	0.0101	0.1471	0.0367	9.33E-03	0.046	1.1073	2.81E-03	230.6	0.00	0	230.7

3.2 Site Preparation - 2019

Mitigated Construction On-Site

Category	tons/yr	NOx	ROG	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	CO	SO2	Total CO2	CH4	N2O	CO2e
Fugitive Dust				1.8531	0	1.8531	1.0081	0	1.0081			0.0	0.00	0	0.0
Off-Road	5.1691		0.2622		0.225	0.225		0.225	0.225	6.3076	0.0107	963.1	0.30	0	969.5
Total	5.1691		0.2622	1.8531	0.225	2.0781	1.0081	0.225	1.2331	6.3076	0.0107	963.1	0.30	0	969.5

Mitigated Construction Off-Site

Category	tons/yr	NOx	ROG	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	CO	SO2	Total CO2	CH4	N2O	CO2e
Hauling	0.2502		0.0236	0.046	4.52E-03	0.0505	0.012	4.16E-03	0.0161	0.2981	9.80E-04	85.1	0.00	0	85.1
Vendor	0.1253		0.0168	0.0111	2.11E-03	0.0132	3.17E-03	1.94E-03	5.11E-03	0.232	4.00E-04	35.0	0.00	0	35.1
Worker	0.0216		0.0126	0.0526	3.60E-04	0.0529	0.014	3.30E-04	0.0143	0.2046	6.30E-04	41.6	0.00	0	41.7
Total	0.3971		0.053	0.1097	6.99E-03	0.1167	0.0291	6.43E-03	0.0355	0.7347	2.01E-03	161.8	0.00	0	161.8

3.3 Building Construction - 2018

Mitigated Construction On-Site

	NOx	ROG	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	CO	SO2	Total CO2	CH4	N2O	CO2e
--	-----	-----	---------------	--------------	------------	----------------	---------------	-------------	----	-----	-----------	-----	-----	------

Category	tons/yr												
Off-Road		6.5134	0.3312	0.3108	0.3108	0.3108	0.3108	8.0088	0.0132	1,188.6	0.35	0	1,195.9
Total		6.5134	0.3312	0.3108	0.3108	0.3108	0.3108	8.0088	0.0132	1,188.6	0.35	0	1,195.9

Mitigated Construction Off-Site

	NOx	ROG	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	CO	SO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr													
Hauling	0.3826	0.0359	0.055	6.42E-03	0.0614	0.0144	5.91E-03	0.0203	0.4416	1.36E-03	120.7	0.00	0	120.7
Vendor	0.3852	0.0533	0.0308	6.42E-03	0.0373	8.83E-03	5.90E-03	0.0147	0.6995	1.13E-03	99.4	0.00	0	99.4
Worker	0.0738	0.0435	0.1628	1.13E-03	0.164	0.0433	1.04E-03	0.0443	0.7022	1.95E-03	133.8	0.01	0	133.9
Total	0.8417	0.1327	0.2487	0.014	0.2626	0.0665	0.0129	0.0794	1.8433	4.44E-03	353.8	0.01	0	354.0

3.3 Building Construction - 2019

Mitigated Construction On-Site

		NOx	ROG	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	CO	SO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr														
Off-Road		6.5383	0.3325		0.312	0.312		0.312	0.312	8.0394	0.0133	1,175.7	0.35	0	1,183.0
Total		6.5383	0.3325		0.312	0.312		0.312	0.312	8.0394	0.0133	1,175.7	0.35	0	1,183.0

Mitigated Construction Off-Site

	NOx	ROG	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	CO	SO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr													
Hauling	0.35	0.033	0.055	6.32E-03	0.0613	0.0144	5.81E-03	0.0202	0.417	1.37E-03	119.0	0.00	0	119.0
Vendor	0.3506	0.047	0.031	5.91E-03	0.0369	8.87E-03	5.44E-03	0.0143	0.6492	1.13E-03	98.1	0.00	0	98.1
Worker	0.0671	0.039	0.1635	1.11E-03	0.1646	0.0434	1.03E-03	0.0445	0.6359	1.95E-03	129.4	0.01	0	129.6
Total	0.7677	0.1191	0.2494	0.0133	0.2628	0.0667	0.0123	0.079	1.7021	4.45E-03	346.5	0.01	0	346.7

Appendix I - For Input to CalEEMod: Phasing and Typical Personnel and Equipment

							2018	2018	2018	2019	2019	2019	2019	2020	2020
Activity	Personnel / Typical Fleet	Typ Heavy Duty Equipment	Typ Haul Trips Daily	Sum Haul Trips	Start	Phasing Days	2Q	3Q	4Q	2019-1Q	2Q	3Q	4Q	2020-1Q	2Q
Right-of-Way (access roads and vegetation clearing)	2 to 4 equipment operators	4 pcs	4	1,500	3/1/2018	375	X	X	X	X	X				
Excavation for foundations	4 to 8 laborers/equipment operators	8 pcs	8	3,000	6/1/2018	375		X	X	X	X	X			
Foundation installation (anchor bolt/rebar cages)	4 to 6 laborers/equipment operators and 3 to 5 ironworkers	12 pcs	20	7,500	6/1/2018	375		X	X	X	X	X			
	4 to 6 linemen/laborers and crane operators	6 pcs	8	3,600	6/1/2018	450		X	X	X	X	X	X		
Structure assembly and erection	1 pilot and 1 ground person fueler	[est 10 hr/day]			3/1/2019	375					X	X	X	X	X
Helicopter use	20 to 25 linemen/groundmen	10 pcs	20	4,500	10/1/2019	225							X	X	X
Conductor stringing															
Disturbance area restoration (Cleanup and Revegetation)	3 to 6 laborers	4 pcs	4	900	10/1/2019	225							X	X	X
Substation improvements and expansion	20 to 25 electricians, linemen, laborers, equipment, operators, and ironworkers	18 pcs	14	6,300	3/1/2018	450	X	X	X	X	X	X			
Substation construction (Tracy East and Los Banos West)	20 to 40 electricians, linemen, laborers, equipment, operators, and ironworkers	20 pcs	14	7,350	3/1/2018	525	X	X	X	X	X	X	X		

Appendix I-2

Air Quality Emission Calculations,
CalEEMod Output:
Right-of-Way Construction Activity

1118 020M SLTP Transmission ROW
San Joaquin Valley Unified APCD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Heavy Industry	6,019.00	1000sqft	138.18	6,019,000.00	0

1.2 Other Project Characteristics

Urbanization	Rural	Wind Speed (m/s)	2.7	Precipitation Freq (Days)	45
Climate Zone	3			Operational Year	2021
Utility Company					
CO2 Intensity (lb/MWhr)	0	CH4 Intensity (lb/MWhr)	0	N2O Intensity (lb/MWhr)	0

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - proxy metric for ROW in caleemod is 6,019,000 sf industrial or 95 miles at access rd width of 12 ft

Construction Phase - based on 75 working days per calendar quarter and six workdays per week

Off-road Equipment - 10 pcs during conductor stringing

Off-road Equipment - 12 pcs during foundation install

Off-road Equipment - 8 pcs for excav for founds

Off-road Equipment - 4 pcs during restoration

Off-road Equipment - 4 pcs during ROW prep

Off-road Equipment - 6 pcs during structure assy

Trips and VMT - Haul trips majority during excavation, foundation, assembly of structures

On-road Fugitive Dust - 80 percent paved for all trips

Grading - 498 acres total temporary disturbance in Appx E

Vehicle Trips - Operational at 20 trips daily

Road Dust - 95 percent paved for all trips

Consumer Products - consumer product ROG not applicable to this project

Area Coating - interior coatings not applicable to this project

Energy Use - energy use for this land use type not applicable

Water And Wastewater - water use for this land use type not applicable

Solid Waste - solid waste factors for this land use type not applicable

Construction Off-road Equipment Mitigation - Tier 3 fleet minimum and apply soil stabilizers or water 2x and Reg 8 comply

Operational Off-Road Equipment - Up to 5 pcs of typ off-road equip for routine ROW ops and maint

Table Name	Column Name	Default Value	New Value
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	7.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	7.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	13.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstructionPhase	NumDays	3,100.00	375.00
tblConstructionPhase	NumDays	3,100.00	450.00
tblConstructionPhase	NumDays	3,100.00	225.00
tblConstructionPhase	NumDays	310.00	375.00
tblConstructionPhase	NumDays	120.00	375.00
tblConstructionPhase	NumDays	120.00	225.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00

[illegible]

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOnRoadDust	HaulingPercentPave	100.00	80.00
tblOnRoadDust	HaulingPercentPave	100.00	80.00
tblOnRoadDust	HaulingPercentPave	100.00	80.00
tblOnRoadDust	HaulingPercentPave	100.00	80.00
tblOnRoadDust	HaulingPercentPave	100.00	80.00
tblOnRoadDust	HaulingPercentPave	100.00	80.00
tblOnRoadDust	VendorPercentPave	100.00	80.00
tblOnRoadDust	VendorPercentPave	100.00	80.00
tblOnRoadDust	VendorPercentPave	100.00	80.00
tblOnRoadDust	VendorPercentPave	100.00	80.00
tblOnRoadDust	VendorPercentPave	100.00	80.00
tblOnRoadDust	VendorPercentPave	100.00	80.00
tblOnRoadDust	WorkerPercentPave	100.00	80.00
tblOnRoadDust	WorkerPercentPave	100.00	80.00
tblOnRoadDust	WorkerPercentPave	100.00	80.00
tblOnRoadDust	WorkerPercentPave	100.00	80.00
tblOnRoadDust	WorkerPercentPave	100.00	80.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	2.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	2.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	1.00
tblProjectCharacteristics	OperationalYear	2014	2021
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblRoadDust	RoadPercentPave	100	95
tblSolidWaste	SolidWasteGenerationRate	7,463.56	0.00

tblTripsAndVMT	HaulingTripNumber	0.00	1,500.00
tblTripsAndVMT	HaulingTripNumber	0.00	3,000.00
tblTripsAndVMT	HaulingTripNumber	0.00	7,500.00
tblTripsAndVMT	HaulingTripNumber	0.00	3,600.00
tblTripsAndVMT	HaulingTripNumber	0.00	900.00
tblTripsAndVMT	HaulingTripNumber	0.00	4,500.00
tblTripsAndVMT	VendorTripNumber	987.00	20.00
tblTripsAndVMT	VendorTripNumber	987.00	20.00
tblTripsAndVMT	VendorTripNumber	987.00	20.00
tblTripsAndVMT	WorkerTripNumber	30.00	20.00
tblTripsAndVMT	WorkerTripNumber	2,528.00	50.00
tblTripsAndVMT	WorkerTripNumber	2,528.00	50.00
tblTripsAndVMT	WorkerTripNumber	2,528.00	50.00
tblVehicleTrips	ST_TR	1.50	0.01
tblVehicleTrips	SU_TR	1.50	0.01
tblVehicleTrips	WD_TR	1.50	0.01
tblWater	IndoorWaterUseRate	1,391,893,750.00	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2018	1.8595	18.4016	14.1314	0.0254	104.1657	0.8847	105.0504	11.9649	0.8232	12.7881	0.0000	2,242.672 4	2,242.672 4	0.5233	0.0000	2,253.662 0
2019	1.9942	19.3521	15.6175	0.0312	140.2481	0.9017	141.1497	16.1910	0.8400	17.0310	0.0000	2,701.943 6	2,701.943 6	0.6181	0.0000	2,714.924 4
2020	0.5460	5.1808	4.3295	9.5000e-003	37.1186	0.2278	37.3464	4.3306	0.2112	4.5418	0.0000	810.9329	810.9329	0.1940	0.0000	815.0064
Total	4.3997	42.9345	34.0784	0.0660	281.5323	2.0142	283.5465	32.4865	1.8744	34.3609	0.0000	5,755.548 8	5,755.548 8	1.3354	0.0000	5,783.592 8

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2018	0.6443	10.9592	13.9421	0.0254	26.5442	0.4976	27.0419	3.3748	0.4961	3.8709	0.0000	2,242.670 2	2,242.670 2	0.5233	0.0000	2,253.659 9
2019	0.7755	13.1761	16.7726	0.0312	35.7757	0.6006	36.3763	4.5841	0.5987	5.1828	0.0000	2,701.941 1	2,701.941 1	0.6181	0.0000	2,714.921 9
2020	0.2300	3.9307	4.8621	9.5000e-003	9.4889	0.1711	9.6600	1.2360	0.1705	1.4065	0.0000	810.9321	810.9321	0.1940	0.0000	815.0056
Total	1.6498	28.0659	35.5767	0.0660	71.8088	1.2694	73.0782	9.1949	1.2653	10.4602	0.0000	5,755.543 4	5,755.543 4	1.3354	0.0000	5,783.587 4

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	62.50	34.63	-4.40	0.00	74.49	36.98	74.23	71.70	32.50	69.56	0.00	0.00	0.00	0.00	0.00	0.00

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	4.4096	5.1000e-004	0.0555	0.0000		2.0000e-004	2.0000e-004		2.0000e-004	2.0000e-004	0.0000	0.1076	0.1076	2.9000e-004	0.0000	0.1136
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0441	0.1606	0.5550	1.5600e-003	4.4122	3.0300e-003	4.4152	0.4537	2.7900e-003	0.4565	0.0000	113.3433	113.3433	3.0800e-003	0.0000	113.4080
Offroad	0.2365	2.2259	2.0232	5.0700e-003		0.0897	0.0897		0.0825	0.0825	0.0000	445.0331	445.0331	0.1439	0.0000	448.0557
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	4.6901	2.3871	2.6337	6.6300e-003	4.4122	0.0930	4.5052	0.4537	0.0855	0.5393	0.0000	558.4840	558.4840	0.1473	0.0000	561.5773

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	4.4096	5.1000e-004	0.0555	0.0000		2.0000e-004	2.0000e-004		2.0000e-004	2.0000e-004	0.0000	0.1076	0.1076	2.9000e-004	0.0000	0.1136
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0441	0.1606	0.5550	1.5600e-003	4.4122	3.0300e-003	4.4152	0.4537	2.7900e-003	0.4565	0.0000	113.3433	113.3433	3.0800e-003	0.0000	113.4080
Offroad	0.2365	2.2259	2.0232	5.0700e-003		0.0897	0.0897		0.0825	0.0825	0.0000	445.0331	445.0331	0.1439	0.0000	448.0557
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	4.6901	2.3871	2.6337	6.6300e-003	4.4122	0.0930	4.5052	0.4537	0.0855	0.5393	0.0000	558.4840	558.4840	0.1473	0.0000	561.5773

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	5.04	93.25	76.82	76.47	0.00	96.53	1.99	0.00	96.50	15.31	0.00	79.69	79.69	97.71	0.00	79.79

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	3/1/2018	5/11/2019	6	375	ROW clearing
2	Grading	Grading	6/1/2018	8/12/2019	6	375	Excavation foundations
3	Foundation Construction	Building Construction	6/1/2018	8/12/2019	6	375	Install foundations
4	Structure Assembly	Building Construction	6/1/2018	11/7/2019	6	450	Assemble structures
5	Restoration	Site Preparation	10/1/2019	6/18/2020	6	225	Restoration
6	Conductor Stringing	Building Construction	10/1/2019	6/18/2020	6	225	Conductor stringing

Acres of Grading (Site Preparation Phase): 498

Acres of Grading (Grading Phase): 937.5

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	2	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Grading	Air Compressors	2	8.00	78	0.48
Grading	Bore/Drill Rigs	2	8.00	205	0.50
Grading	Excavators	2	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Scrapers	2	8.00	361	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Foundation Construction	Cranes	1	7.00	226	0.29
Foundation Construction	Forklifts	3	8.00	89	0.20
Foundation Construction	Generator Sets	1	8.00	84	0.74

Foundation Construction	Off-Highway Trucks	3	8.00	400	0.38
Foundation Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Foundation Construction	Welders	2	8.00	46	0.45
Structure Assembly	Cranes	2	7.00	226	0.29
Structure Assembly	Forklifts	2	8.00	89	0.20
Structure Assembly	Generator Sets	1	8.00	84	0.74
Structure Assembly	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Structure Assembly	Welders	1	8.00	46	0.45
Restoration	Rubber Tired Dozers	2	8.00	255	0.40
Restoration	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Conductor Stringing	Cranes	1	7.00	226	0.29
Conductor Stringing	Forklifts	2	8.00	89	0.20
Conductor Stringing	Generator Sets	1	8.00	84	0.74
Conductor Stringing	Off-Highway Trucks	4	8.00	400	0.38
Conductor Stringing	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Conductor Stringing	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	4	10.00	0.00	1,500.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading	12	20.00	0.00	3,000.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Foundation Construction	13	50.00	20.00	7,500.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Structure Assembly	8	50.00	20.00	3,600.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Restoration	4	10.00	0.00	900.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Conductor Stringing	11	50.00	20.00	4,500.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use Soil Stabilizer

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Site Preparation - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.5224	0.0000	2.5224	1.2699	0.0000	1.2699	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.3516	3.7535	2.9604	3.1400e-003		0.1903	0.1903		0.1751	0.1751	0.0000	287.3578	287.3578	0.0895	0.0000	289.2364
Total	0.3516	3.7535	2.9604	3.1400e-003	2.5224	0.1903	2.7127	1.2699	0.1751	1.4449	0.0000	287.3578	287.3578	0.0895	0.0000	289.2364

3.2 Site Preparation - 2018**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0103	0.1093	0.1262	3.9000e-004	3.8809	1.8400e-003	3.8828	0.3890	1.6900e-003	0.3906	0.0000	34.4768	34.4768	2.5000e-004	0.0000	34.4821
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.3500e-003	7.3800e-003	0.0702	1.9000e-004	5.6930	1.1000e-004	5.6931	0.5703	1.0000e-004	0.5704	0.0000	13.3758	13.3758	6.4000e-004	0.0000	13.3893
Total	0.0146	0.1167	0.1964	5.8000e-004	9.5739	1.9500e-003	9.5759	0.9593	1.7900e-003	0.9611	0.0000	47.8527	47.8527	8.9000e-004	0.0000	47.8714

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.1351	0.0000	1.1351	0.5714	0.0000	0.5714	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0765	1.5479	1.8391	3.1400e-003		0.0733	0.0733		0.0733	0.0733	0.0000	287.3575	287.3575	0.0895	0.0000	289.2361
Total	0.0765	1.5479	1.8391	3.1400e-003	1.1351	0.0733	1.2084	0.5714	0.0733	0.6448	0.0000	287.3575	287.3575	0.0895	0.0000	289.2361

3.2 Site Preparation - 2018**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0103	0.1093	0.1262	3.9000e-004	0.9580	1.8400e-003	0.9598	0.0972	1.6900e-003	0.0989	0.0000	34.4768	34.4768	2.5000e-004	0.0000	34.4821
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.3500e-003	7.3800e-003	0.0702	1.9000e-004	1.4045	1.1000e-004	1.4046	0.1422	1.0000e-004	0.1423	0.0000	13.3758	13.3758	6.4000e-004	0.0000	13.3893
Total	0.0146	0.1167	0.1964	5.8000e-004	2.3624	1.9500e-003	2.3644	0.2394	1.7900e-003	0.2412	0.0000	47.8527	47.8527	8.9000e-004	0.0000	47.8714

3.2 Site Preparation - 2019**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.5224	0.0000	2.5224	1.2699	0.0000	1.2699	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1426	1.5130	1.2244	1.3600e-003		0.0751	0.0751		0.0691	0.0691	0.0000	121.9612	121.9612	0.0386	0.0000	122.7715
Total	0.1426	1.5130	1.2244	1.3600e-003	2.5224	0.0751	2.5975	1.2699	0.0691	1.3390	0.0000	121.9612	121.9612	0.0386	0.0000	122.7715

3.2 Site Preparation - 2019**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	4.0500e-003	0.0430	0.0512	1.7000e-004	3.8797	7.8000e-004	3.8804	0.3885	7.1000e-004	0.3892	0.0000	14.6102	14.6102	1.1000e-004	0.0000	14.6124
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.6800e-003	2.8800e-003	0.0273	8.0000e-005	2.4554	5.0000e-005	2.4554	0.2460	4.0000e-005	0.2460	0.0000	5.5609	5.5609	2.6000e-004	0.0000	5.5663
Total	5.7300e-003	0.0459	0.0785	2.5000e-004	6.3350	8.3000e-004	6.3359	0.6345	7.5000e-004	0.6352	0.0000	20.1711	20.1711	3.7000e-004	0.0000	20.1788

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.1351	0.0000	1.1351	0.5714	0.0000	0.5714	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0330	0.6676	0.7932	1.3600e-003		0.0316	0.0316		0.0316	0.0316	0.0000	121.9610	121.9610	0.0386	0.0000	122.7714
Total	0.0330	0.6676	0.7932	1.3600e-003	1.1351	0.0316	1.1667	0.5714	0.0316	0.6031	0.0000	121.9610	121.9610	0.0386	0.0000	122.7714

3.2 Site Preparation - 2019**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	4.0500e-003	0.0430	0.0512	1.7000e-004	0.9567	7.8000e-004	0.9575	0.0967	7.1000e-004	0.0974	0.0000	14.6102	14.6102	1.1000e-004	0.0000	14.6124
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.6800e-003	2.8800e-003	0.0273	8.0000e-005	0.6057	5.0000e-005	0.6058	0.0613	4.0000e-005	0.0614	0.0000	5.5609	5.5609	2.6000e-004	0.0000	5.5663
Total	5.7300e-003	0.0459	0.0785	2.5000e-004	1.5624	8.3000e-004	1.5633	0.1580	7.5000e-004	0.1588	0.0000	20.1711	20.1711	3.7000e-004	0.0000	20.1788

3.3 Grading - 2018**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.6263	0.0000	1.6263	0.6743	0.0000	0.6743	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.6080	6.6490	4.6786	7.9700e-003		0.3120	0.3120		0.2900	0.2900	0.0000	723.4346	723.4346	0.2117	0.0000	727.8811
Total	0.6080	6.6490	4.6786	7.9700e-003	1.6263	0.3120	1.9382	0.6743	0.2900	0.9643	0.0000	723.4346	723.4346	0.2117	0.0000	727.8811

3.3 Grading - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0144	0.1527	0.1762	5.4000e-004	7.7605	2.5600e-003	7.7631	0.7774	2.3600e-003	0.7798	0.0000	48.1623	48.1623	3.5000e-004	0.0000	48.1696
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0700e-003	0.0103	0.0981	2.7000e-004	7.9528	1.6000e-004	7.9530	0.7967	1.5000e-004	0.7969	0.0000	18.6853	18.6853	9.0000e-004	0.0000	18.7042
Total	0.0204	0.1630	0.2743	8.1000e-004	15.7134	2.7200e-003	15.7161	1.5741	2.5100e-003	1.5767	0.0000	66.8476	66.8476	1.2500e-003	0.0000	66.8738

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.7318	0.0000	0.7318	0.3035	0.0000	0.3035	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1926	3.8235	4.7791	7.9700e-003		0.1734	0.1734		0.1734	0.1734	0.0000	723.4337	723.4337	0.2117	0.0000	727.8802
Total	0.1926	3.8235	4.7791	7.9700e-003	0.7318	0.1734	0.9052	0.3035	0.1734	0.4769	0.0000	723.4337	723.4337	0.2117	0.0000	727.8802

3.3 Grading - 2018**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0144	0.1527	0.1762	5.4000e-004	1.9146	2.5600e-003	1.9172	0.1938	2.3600e-003	0.1962	0.0000	48.1623	48.1623	3.5000e-004	0.0000	48.1696
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0700e-003	0.0103	0.0981	2.7000e-004	1.9619	1.6000e-004	1.9621	0.1987	1.5000e-004	0.1988	0.0000	18.6853	18.6853	9.0000e-004	0.0000	18.7042
Total	0.0204	0.1630	0.2743	8.1000e-004	3.8766	2.7200e-003	3.8793	0.3925	2.5100e-003	0.3950	0.0000	66.8476	66.8476	1.2500e-003	0.0000	66.8738

3.3 Grading - 2019**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.6263	0.0000	1.6263	0.6743	0.0000	0.6743	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.5875	6.3304	4.7072	8.3500e-003		0.2921	0.2921		0.2714	0.2714	0.0000	747.4125	747.4125	0.2213	0.0000	752.0601
Total	0.5875	6.3304	4.7072	8.3500e-003	1.6263	0.2921	1.9183	0.6743	0.2714	0.9457	0.0000	747.4125	747.4125	0.2213	0.0000	752.0601

3.3 Grading - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0138	0.1460	0.1740	5.7000e-004	7.7607	2.6400e-003	7.7633	0.7775	2.4300e-003	0.7799	0.0000	49.6488	49.6488	3.6000e-004	0.0000	49.6564
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.7000e-003	9.8000e-003	0.0929	2.9000e-004	8.3439	1.6000e-004	8.3441	0.8359	1.5000e-004	0.8361	0.0000	18.8973	18.8973	8.7000e-004	0.0000	18.9157
Total	0.0195	0.1558	0.2668	8.6000e-004	16.1046	2.8000e-003	16.1074	1.6134	2.5800e-003	1.6160	0.0000	68.5461	68.5461	1.2300e-003	0.0000	68.5721

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.7318	0.0000	0.7318	0.3035	0.0000	0.3035	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2021	4.0115	5.0141	8.3500e-003		0.1819	0.1819		0.1819	0.1819	0.0000	747.4116	747.4116	0.2213	0.0000	752.0592
Total	0.2021	4.0115	5.0141	8.3500e-003	0.7318	0.1819	0.9137	0.3035	0.1819	0.4854	0.0000	747.4116	747.4116	0.2213	0.0000	752.0592

3.3 Grading - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0138	0.1460	0.1740	5.7000e-004	1.9148	2.6400e-003	1.9174	0.1939	2.4300e-003	0.1963	0.0000	49.6488	49.6488	3.6000e-004	0.0000	49.6564
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.7000e-003	9.8000e-003	0.0929	2.9000e-004	2.0584	1.6000e-004	2.0586	0.2085	1.5000e-004	0.2086	0.0000	18.8973	18.8973	8.7000e-004	0.0000	18.9157
Total	0.0195	0.1558	0.2668	8.6000e-004	3.9732	2.8000e-003	3.9760	0.4024	2.5800e-003	0.4049	0.0000	68.5461	68.5461	1.2300e-003	0.0000	68.5721

3.4 Foundation Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.4958	4.5561	2.9220	6.3000e-003		0.2301	0.2301		0.2153	0.2153	0.0000	563.3231	563.3231	0.1589	0.0000	566.6597
Total	0.4958	4.5561	2.9220	6.3000e-003		0.2301	0.2301		0.2153	0.2153	0.0000	563.3231	563.3231	0.1589	0.0000	566.6597

3.4 Foundation Construction - 2018**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0359	0.3818	0.4406	1.3600e-003	19.4013	6.4100e-003	19.4077	1.9435	5.9000e-003	1.9494	0.0000	120.4057	120.4057	8.7000e-004	0.0000	120.4241
Vendor	0.0186	0.1345	0.2443	3.9000e-004	3.1262	2.2400e-003	3.1284	0.3137	2.0600e-003	0.3158	0.0000	34.7219	34.7219	2.9000e-004	0.0000	34.7279
Worker	0.0152	0.0258	0.2452	6.8000e-004	19.8821	3.9000e-004	19.8825	1.9918	3.6000e-004	1.9922	0.0000	46.7133	46.7133	2.2400e-003	0.0000	46.7604
Total	0.0697	0.5421	0.9301	2.4300e-003	42.4095	9.0400e-003	42.4186	4.2491	8.3200e-003	4.2574	0.0000	201.8409	201.8409	3.4000e-003	0.0000	201.9124

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1594	3.1589	3.6804	6.3000e-003		0.1566	0.1566		0.1566	0.1566	0.0000	563.3224	563.3224	0.1589	0.0000	566.6590
Total	0.1594	3.1589	3.6804	6.3000e-003		0.1566	0.1566		0.1566	0.1566	0.0000	563.3224	563.3224	0.1589	0.0000	566.6590

3.4 Foundation Construction - 2018**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0359	0.3818	0.4406	1.3600e-003	4.7866	6.4100e-003	4.7930	0.4846	5.9000e-003	0.4905	0.0000	120.4057	120.4057	8.7000e-004	0.0000	120.4241
Vendor	0.0186	0.1345	0.2443	3.9000e-004	0.7726	2.2400e-003	0.7748	0.0788	2.0600e-003	0.0808	0.0000	34.7219	34.7219	2.9000e-004	0.0000	34.7279
Worker	0.0152	0.0258	0.2452	6.8000e-004	4.9048	3.9000e-004	4.9052	0.4967	3.6000e-004	0.4971	0.0000	46.7133	46.7133	2.2400e-003	0.0000	46.7604
Total	0.0697	0.5421	0.9301	2.4300e-003	10.4640	9.0400e-003	10.4730	1.0601	8.3200e-003	1.0684	0.0000	201.8409	201.8409	3.4000e-003	0.0000	201.9124

3.4 Foundation Construction - 2019**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.4662	4.2289	2.9624	6.6000e-003		0.2079	0.2079		0.1945	0.1945	0.0000	582.7972	582.7972	0.1653	0.0000	586.2678
Total	0.4662	4.2289	2.9624	6.6000e-003		0.2079	0.2079		0.1945	0.1945	0.0000	582.7972	582.7972	0.1653	0.0000	586.2678

3.4 Foundation Construction - 2019**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0345	0.3651	0.4349	1.4200e-003	19.4017	6.5900e-003	19.4083	1.9437	6.0600e-003	1.9497	0.0000	124.1220	124.1220	9.1000e-004	0.0000	124.1410
Vendor	0.0172	0.1280	0.2370	4.1000e-004	3.2799	2.1600e-003	3.2821	0.3291	1.9800e-003	0.3311	0.0000	35.7912	35.7912	2.9000e-004	0.0000	35.7973
Worker	0.0143	0.0245	0.2321	7.1000e-004	20.8599	4.1000e-004	20.8603	2.0898	3.8000e-004	2.0902	0.0000	47.2433	47.2433	2.1900e-003	0.0000	47.2892
Total	0.0659	0.5175	0.9040	2.5400e-003	43.5415	9.1600e-003	43.5506	4.3626	8.4200e-003	4.3710	0.0000	207.1565	207.1565	3.3900e-003	0.0000	207.2275

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1673	3.3142	3.8614	6.6000e-003		0.1643	0.1643		0.1643	0.1643	0.0000	582.7965	582.7965	0.1653	0.0000	586.2671
Total	0.1673	3.3142	3.8614	6.6000e-003		0.1643	0.1643		0.1643	0.1643	0.0000	582.7965	582.7965	0.1653	0.0000	586.2671

3.4 Foundation Construction - 2019**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0345	0.3651	0.4349	1.4200e-003	4.7870	6.5900e-003	4.7935	0.4848	6.0600e-003	0.4908	0.0000	124.1220	124.1220	9.1000e-004	0.0000	124.1410
Vendor	0.0172	0.1280	0.2370	4.1000e-004	0.8106	2.1600e-003	0.8128	0.0826	1.9800e-003	0.0846	0.0000	35.7912	35.7912	2.9000e-004	0.0000	35.7973
Worker	0.0143	0.0245	0.2321	7.1000e-004	5.1461	4.1000e-004	5.1465	0.5212	3.8000e-004	0.5215	0.0000	47.2433	47.2433	2.1900e-003	0.0000	47.2892
Total	0.0659	0.5175	0.9040	2.5400e-003	10.7436	9.1600e-003	10.7528	1.0886	8.4200e-003	1.0970	0.0000	207.1565	207.1565	3.3900e-003	0.0000	207.2275

3.5 Structure Assembly - 2018**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2513	2.3080	1.5039	2.5200e-003		0.1334	0.1334		0.1255	0.1255	0.0000	222.4183	222.4183	0.0548	0.0000	223.5694
Total	0.2513	2.3080	1.5039	2.5200e-003		0.1334	0.1334		0.1255	0.1255	0.0000	222.4183	222.4183	0.0548	0.0000	223.5694

3.5 Structure Assembly - 2018**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0144	0.1527	0.1762	5.4000e-004	9.3120	2.5600e-003	9.3146	0.9327	2.3600e-003	0.9350	0.0000	48.1623	48.1623	3.5000e-004	0.0000	48.1696
Vendor	0.0186	0.1345	0.2443	3.9000e-004	3.1262	2.2400e-003	3.1284	0.3137	2.0600e-003	0.3158	0.0000	34.7219	34.7219	2.9000e-004	0.0000	34.7279
Worker	0.0152	0.0258	0.2452	6.8000e-004	19.8821	3.9000e-004	19.8825	1.9918	3.6000e-004	1.9922	0.0000	46.7133	46.7133	2.2400e-003	0.0000	46.7604
Total	0.0481	0.3130	0.6658	1.6100e-003	32.3202	5.1900e-003	32.3254	3.2382	4.7800e-003	3.2430	0.0000	129.5975	129.5975	2.8800e-003	0.0000	129.6579

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0630	1.2941	1.5770	2.5200e-003		0.0754	0.0754		0.0754	0.0754	0.0000	222.4180	222.4180	0.0548	0.0000	223.5691
Total	0.0630	1.2941	1.5770	2.5200e-003		0.0754	0.0754		0.0754	0.0754	0.0000	222.4180	222.4180	0.0548	0.0000	223.5691

3.5 Structure Assembly - 2018**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0144	0.1527	0.1762	5.4000e-004	2.2969	2.5600e-003	2.2995	0.2324	2.3600e-003	0.2347	0.0000	48.1623	48.1623	3.5000e-004	0.0000	48.1696
Vendor	0.0186	0.1345	0.2443	3.9000e-004	0.7726	2.2400e-003	0.7748	0.0788	2.0600e-003	0.0808	0.0000	34.7219	34.7219	2.9000e-004	0.0000	34.7279
Worker	0.0152	0.0258	0.2452	6.8000e-004	4.9048	3.9000e-004	4.9052	0.4967	3.6000e-004	0.4971	0.0000	46.7133	46.7133	2.2400e-003	0.0000	46.7604
Total	0.0481	0.3130	0.6658	1.6100e-003	7.9744	5.1900e-003	7.9796	0.8079	4.7800e-003	0.8127	0.0000	129.5975	129.5975	2.8800e-003	0.0000	129.6579

3.5 Structure Assembly - 2019**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.3230	3.0216	2.1192	3.6700e-003		0.1677	0.1677		0.1577	0.1577	0.0000	320.8585	320.8585	0.0787	0.0000	322.5107
Total	0.3230	3.0216	2.1192	3.6700e-003		0.1677	0.1677		0.1577	0.1577	0.0000	320.8585	320.8585	0.0787	0.0000	322.5107

3.5 Structure Assembly - 2019**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0192	0.2031	0.2419	7.9000e-004	9.3135	3.6700e-003	9.3171	0.9332	3.3700e-003	0.9366	0.0000	69.0429	69.0429	5.0000e-004	0.0000	69.0535
Vendor	0.0239	0.1780	0.3296	5.7000e-004	4.5611	3.0000e-003	4.5641	0.4577	2.7600e-003	0.4605	0.0000	49.7721	49.7721	4.0000e-004	0.0000	49.7806
Worker	0.0198	0.0341	0.3228	9.9000e-004	29.0082	5.6000e-004	29.0088	2.9061	5.2000e-004	2.9066	0.0000	65.6978	65.6978	3.0400e-003	0.0000	65.7616
Total	0.0629	0.4151	0.8943	2.3500e-003	42.8828	7.2300e-003	42.8900	4.2970	6.6500e-003	4.3037	0.0000	184.5127	184.5127	3.9400e-003	0.0000	184.5956

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0919	1.8881	2.3008	3.6700e-003		0.1100	0.1100		0.1100	0.1100	0.0000	320.8581	320.8581	0.0787	0.0000	322.5103
Total	0.0919	1.8881	2.3008	3.6700e-003		0.1100	0.1100		0.1100	0.1100	0.0000	320.8581	320.8581	0.0787	0.0000	322.5103

3.5 Structure Assembly - 2019**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0192	0.2031	0.2419	7.9000e-004	2.2984	3.6700e-003	2.3020	0.2329	3.3700e-003	0.2363	0.0000	69.0429	69.0429	5.0000e-004	0.0000	69.0535
Vendor	0.0239	0.1780	0.3296	5.7000e-004	1.1272	3.0000e-003	1.1302	0.1149	2.7600e-003	0.1177	0.0000	49.7721	49.7721	4.0000e-004	0.0000	49.7806
Worker	0.0198	0.0341	0.3228	9.9000e-004	7.1562	5.6000e-004	7.1568	0.7247	5.2000e-004	0.7253	0.0000	65.6978	65.6978	3.0400e-003	0.0000	65.7616
Total	0.0629	0.4151	0.8943	2.3500e-003	10.5818	7.2300e-003	10.5891	1.0726	6.6500e-003	1.0792	0.0000	184.5127	184.5127	3.9400e-003	0.0000	184.5956

3.6 Restoration - 2019**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.6190	0.0000	1.6190	0.7733	0.0000	0.7733	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0997	1.0577	0.8560	9.5000e-004		0.0525	0.0525		0.0483	0.0483	0.0000	85.2649	85.2649	0.0270	0.0000	85.8314
Total	0.0997	1.0577	0.8560	9.5000e-004	1.6190	0.0525	1.6716	0.7733	0.0483	0.8216	0.0000	85.2649	85.2649	0.0270	0.0000	85.8314

3.6 Restoration - 2019**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.8300e-003	0.0300	0.0358	1.2000e-004	2.3279	5.4000e-004	2.3284	0.2331	5.0000e-004	0.2336	0.0000	10.2142	10.2142	7.0000e-005	0.0000	10.2158
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1700e-003	2.0200e-003	0.0191	6.0000e-005	1.7166	3.0000e-005	1.7166	0.1720	3.0000e-005	0.1720	0.0000	3.8877	3.8877	1.8000e-004	0.0000	3.8915
Total	4.0000e-003	0.0321	0.0549	1.8000e-004	4.0445	5.7000e-004	4.0451	0.4051	5.3000e-004	0.4056	0.0000	14.1019	14.1019	2.5000e-004	0.0000	14.1073

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.7286	0.0000	0.7286	0.3480	0.0000	0.3480	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0231	0.4667	0.5545	9.5000e-004		0.0221	0.0221		0.0221	0.0221	0.0000	85.2648	85.2648	0.0270	0.0000	85.8313
Total	0.0231	0.4667	0.5545	9.5000e-004	0.7286	0.0221	0.7507	0.3480	0.0221	0.3701	0.0000	85.2648	85.2648	0.0270	0.0000	85.8313

3.6 Restoration - 2019**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.8300e-003	0.0300	0.0358	1.2000e-004	0.5741	5.4000e-004	0.5747	0.0581	5.0000e-004	0.0586	0.0000	10.2142	10.2142	7.0000e-005	0.0000	10.2158
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1700e-003	2.0200e-003	0.0191	6.0000e-005	0.4235	3.0000e-005	0.4235	0.0429	3.0000e-005	0.0429	0.0000	3.8877	3.8877	1.8000e-004	0.0000	3.8915
Total	4.0000e-003	0.0321	0.0549	1.8000e-004	0.9976	5.7000e-004	0.9982	0.1010	5.3000e-004	0.1015	0.0000	14.1019	14.1019	2.5000e-004	0.0000	14.1073

3.6 Restoration - 2020**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.6190	0.0000	1.6190	0.7733	0.0000	0.7733	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1711	1.7889	1.4915	1.7500e-003		0.0875	0.0875		0.0805	0.0805	0.0000	154.1491	154.1491	0.0499	0.0000	155.1961
Total	0.1711	1.7889	1.4915	1.7500e-003	1.6190	0.0875	1.7065	0.7733	0.0805	0.8538	0.0000	154.1491	154.1491	0.0499	0.0000	155.1961

3.6 Restoration - 2020**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	4.8000e-003	0.0480	0.0624	2.2000e-004	2.3285	9.8000e-004	2.3295	0.2333	9.1000e-004	0.2342	0.0000	18.4402	18.4402	1.4000e-004	0.0000	18.4430
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.9900e-003	3.4200e-003	0.0324	1.1000e-004	3.1724	6.0000e-005	3.1725	0.3178	6.0000e-005	0.3179	0.0000	6.8995	6.8995	3.1000e-004	0.0000	6.9060
Total	6.7900e-003	0.0514	0.0948	3.3000e-004	5.5009	1.0400e-003	5.5020	0.5512	9.7000e-004	0.5521	0.0000	25.3396	25.3396	4.5000e-004	0.0000	25.3491

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.7286	0.0000	0.7286	0.3480	0.0000	0.3480	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0426	0.8626	1.0248	1.7500e-003		0.0409	0.0409		0.0409	0.0409	0.0000	154.1489	154.1489	0.0499	0.0000	155.1959
Total	0.0426	0.8626	1.0248	1.7500e-003	0.7286	0.0409	0.7694	0.3480	0.0409	0.3889	0.0000	154.1489	154.1489	0.0499	0.0000	155.1959

3.6 Restoration - 2020**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	4.8000e-003	0.0480	0.0624	2.2000e-004	0.5747	9.8000e-004	0.5757	0.0583	9.1000e-004	0.0592	0.0000	18.4402	18.4402	1.4000e-004	0.0000	18.4430
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.9900e-003	3.4200e-003	0.0324	1.1000e-004	0.7826	6.0000e-005	0.7827	0.0793	6.0000e-005	0.0793	0.0000	6.8995	6.8995	3.1000e-004	0.0000	6.9060
Total	6.7900e-003	0.0514	0.0948	3.3000e-004	1.3573	1.0400e-003	1.3584	0.1375	9.7000e-004	0.1385	0.0000	25.3396	25.3396	4.5000e-004	0.0000	25.3491

3.7 Conductor Stringing - 2019**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1901	1.8212	1.1779	2.9700e-003		0.0821	0.0821		0.0766	0.0766	0.0000	263.9247	263.9247	0.0767	0.0000	265.5363
Total	0.1901	1.8212	1.1779	2.9700e-003		0.0821	0.0821		0.0766	0.0766	0.0000	263.9247	263.9247	0.0767	0.0000	265.5363

3.7 Conductor Stringing - 2019**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0142	0.1502	0.1789	5.9000e-004	11.6395	2.7100e-003	11.6422	1.1656	2.5000e-003	1.1681	0.0000	51.0710	51.0710	3.7000e-004	0.0000	51.0789
Vendor	7.0600e-003	0.0527	0.0975	1.7000e-004	1.3495	8.9000e-004	1.3504	0.1354	8.2000e-004	0.1362	0.0000	14.7266	14.7266	1.2000e-004	0.0000	14.7291
Worker	5.8600e-003	0.0101	0.0955	2.9000e-004	8.5830	1.7000e-004	8.5831	0.8599	1.5000e-004	0.8600	0.0000	19.4387	19.4387	9.0000e-004	0.0000	19.4575
Total	0.0271	0.2129	0.3720	1.0500e-003	21.5720	3.7700e-003	21.5758	2.1609	3.4700e-003	2.1644	0.0000	85.2363	85.2363	1.3900e-003	0.0000	85.2655

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0732	1.4486	1.6782	2.9700e-003		0.0663	0.0663		0.0663	0.0663	0.0000	263.9243	263.9243	0.0767	0.0000	265.5360
Total	0.0732	1.4486	1.6782	2.9700e-003		0.0663	0.0663		0.0663	0.0663	0.0000	263.9243	263.9243	0.0767	0.0000	265.5360

3.7 Conductor Stringing - 2019**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0142	0.1502	0.1789	5.9000e-004	2.8706	2.7100e-003	2.8733	0.2903	2.5000e-003	0.2928	0.0000	51.0710	51.0710	3.7000e-004	0.0000	51.0789
Vendor	7.0600e-003	0.0527	0.0975	1.7000e-004	0.3335	8.9000e-004	0.3344	0.0340	8.2000e-004	0.0348	0.0000	14.7266	14.7266	1.2000e-004	0.0000	14.7291
Worker	5.8600e-003	0.0101	0.0955	2.9000e-004	2.1174	1.7000e-004	2.1176	0.2144	1.5000e-004	0.2146	0.0000	19.4387	19.4387	9.0000e-004	0.0000	19.4575
Total	0.0271	0.2129	0.3720	1.0500e-003	5.3215	3.7700e-003	5.3253	0.5387	3.4700e-003	0.5422	0.0000	85.2363	85.2363	1.3900e-003	0.0000	85.2655

3.7 Conductor Stringing - 2020**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.3229	3.0010	2.1023	5.4800e-003		0.1326	0.1326		0.1237	0.1237	0.0000	478.1619	478.1619	0.1412	0.0000	481.1274
Total	0.3229	3.0010	2.1023	5.4800e-003		0.1326	0.1326		0.1237	0.1237	0.0000	478.1619	478.1619	0.1412	0.0000	481.1274

3.7 Conductor Stringing - 2020**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0240	0.2401	0.3121	1.0800e-003	11.6424	4.9200e-003	11.6473	1.1667	4.5300e-003	1.1712	0.0000	92.2008	92.2008	6.8000e-004	0.0000	92.2152
Vendor	0.0113	0.0823	0.1668	3.1000e-004	2.4941	1.4400e-003	2.4955	0.2503	1.3200e-003	0.2516	0.0000	26.5842	26.5842	2.1000e-004	0.0000	26.5886
Worker	9.9400e-003	0.0171	0.1620	5.4000e-004	15.8622	3.1000e-004	15.8625	1.5891	2.8000e-004	1.5894	0.0000	34.4972	34.4972	1.5600e-003	0.0000	34.5301
Total	0.0453	0.3395	0.6410	1.9300e-003	29.9986	6.6700e-003	30.0053	3.0061	6.1300e-003	3.0122	0.0000	153.2822	153.2822	2.4500e-003	0.0000	153.3338

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1353	2.6772	3.1014	5.4800e-003		0.1225	0.1225		0.1225	0.1225	0.0000	478.1614	478.1614	0.1412	0.0000	481.1269
Total	0.1353	2.6772	3.1014	5.4800e-003		0.1225	0.1225		0.1225	0.1225	0.0000	478.1614	478.1614	0.1412	0.0000	481.1269

3.7 Conductor Stringing - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0240	0.2401	0.3121	1.0800e-003	2.8735	4.9200e-003	2.8784	0.2913	4.5300e-003	0.2959	0.0000	92.2008	92.2008	6.8000e-004	0.0000	92.2152
Vendor	0.0113	0.0823	0.1668	3.1000e-004	0.6164	1.4400e-003	0.6178	0.0628	1.3200e-003	0.0642	0.0000	26.5842	26.5842	2.1000e-004	0.0000	26.5886
Worker	9.9400e-003	0.0171	0.1620	5.4000e-004	3.9132	3.1000e-004	3.9135	0.3963	2.8000e-004	0.3966	0.0000	34.4972	34.4972	1.5600e-003	0.0000	34.5301
Total	0.0453	0.3395	0.6410	1.9300e-003	7.4030	6.6700e-003	7.4097	0.7505	6.1300e-003	0.7566	0.0000	153.2822	153.2822	2.4500e-003	0.0000	153.3338

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0441	0.1606	0.5550	1.5600e-003	4.4122	3.0300e-003	4.4152	0.4537	2.7900e-003	0.4565	0.0000	113.3433	113.3433	3.0800e-003	0.0000	113.4080
Unmitigated	0.0441	0.1606	0.5550	1.5600e-003	4.4122	3.0300e-003	4.4152	0.4537	2.7900e-003	0.4565	0.0000	113.3433	113.3433	3.0800e-003	0.0000	113.4080

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Heavy Industry	60.19	60.19	60.19	232,542	232,542
Total	60.19	60.19	60.19	232,542	232,542

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Heavy Industry	14.70	6.60	6.60	59.00	28.00	13.00	92	5	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.409403	0.062545	0.156224	0.176363	0.050982	0.007863	0.019891	0.103627	0.001777	0.001579	0.006540	0.000887	0.002320

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

[illegible]

5.2 Energy by Land Use - NaturalGas

Unmitigated

[illegible]

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Heavy Industry	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Heavy Industry	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Heavy Industry	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	4.4096	5.1000e-004	0.0555	0.0000		2.0000e-004	2.0000e-004		2.0000e-004	2.0000e-004	0.0000	0.1076	0.1076	2.9000e-004	0.0000	0.1136
Unmitigated	4.4096	5.1000e-004	0.0555	0.0000		2.0000e-004	2.0000e-004		2.0000e-004	2.0000e-004	0.0000	0.1076	0.1076	2.9000e-004	0.0000	0.1136

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	4.1847					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2197					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.1900e-003	5.1000e-004	0.0555	0.0000		2.0000e-004	2.0000e-004		2.0000e-004	2.0000e-004	0.0000	0.1076	0.1076	2.9000e-004	0.0000	0.1136
Total	4.4096	5.1000e-004	0.0555	0.0000		2.0000e-004	2.0000e-004		2.0000e-004	2.0000e-004	0.0000	0.1076	0.1076	2.9000e-004	0.0000	0.1136

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	4.1847					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2197					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.1900e-003	5.1000e-004	0.0555	0.0000		2.0000e-004	2.0000e-004		2.0000e-004	2.0000e-004	0.0000	0.1076	0.1076	2.9000e-004	0.0000	0.1136
Total	4.4096	5.1000e-004	0.0555	0.0000		2.0000e-004	2.0000e-004		2.0000e-004	2.0000e-004	0.0000	0.1076	0.1076	2.9000e-004	0.0000	0.1136

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Heavy Industry	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Heavy Industry	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Heavy Industry	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Heavy Industry	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
Off-Highway Tractors	2	8.00	260	122	0.44	Diesel
Off-Highway Trucks	2	8.00	260	400	0.38	Diesel
Rough Terrain Forklifts	1	8.00	260	100	0.40	Diesel

UnMitigated/Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Equipment Type	tons/yr										MT/yr					
Off-Highway Tractors	0.0637	0.6547	0.7925	1.2000e-003		0.0317	0.0317		0.0291	0.0291	0.0000	105.6080	105.6080	0.0342	0.0000	106.3253
Off-Highway Trucks	0.1568	1.3617	0.9325	3.4200e-003		0.0500	0.0500		0.0460	0.0460	0.0000	300.0624	300.0624	0.0971	0.0000	302.1004
Rough Terrain Forklifts	0.0160	0.2096	0.2982	4.5000e-004		8.1200e-003	8.1200e-003		7.4700e-003	7.4700e-003	0.0000	39.3628	39.3628	0.0127	0.0000	39.6301
Total	0.2365	2.2259	2.0232	5.0700e-003		0.0897	0.0897		0.0825	0.0825	0.0000	445.0331	445.0331	0.1439	0.0000	448.0557

10.0 Vegetation

Appendix I-3

Air Quality Emission Calculations,
CalEEMod Output:
Substation Construction Activity

1118 020M SLTP substations
San Joaquin Valley Air Basin, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Heavy Industry	4,000.00	1000sqft	91.83	4,000,000.00	0

1.2 Other Project Characteristics

Urbanization	Rural	Wind Speed (m/s)	2.7	Precipitation Freq (Days)	45
Climate Zone	3			Operational Year	2021
Utility Company					
CO2 Intensity (lb/MWhr)	0	CH4 Intensity (lb/MWhr)	0	N2O Intensity (lb/MWhr)	0

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - proxy metric for substation in caleemod is about 4,000,000 sf industrial

Construction Phase - Demo and coatings phases not applicable

Off-road Equipment - 20 pcs during substation construction

Off-road Equipment - 18 pcs during prep

Trips and VMT - Haul trips at appx 14 per day for full duration

Grading - temp disturb 100 ac for two substations

Vehicle Trips - Operational trips fewer than 20 daily

Consumer Products - consumer product ROG not applicable to this project

Energy Use - energy use for this land use type not applicable

Water And Wastewater - water use for this land use type not applicable

Solid Waste - solid waste factors for this land use type not applicable

Construction Off-road Equipment Mitigation - Tier 3 fleet minimum and water 2x and Reg 8 comply

Table Name	Column Name	Default Value	New Value
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	10.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	7.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3

tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstructionPhase	NumDays	1,550.00	525.00
tblConstructionPhase	NumDays	60.00	450.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	PhaseEndDate	4/10/2021	11/2/2019
tblConstructionPhase	PhaseStartDate	8/8/2019	3/1/2018
tblConsumerProducts	ROG_EF	2.14E-05	2E-07
tblEnergyUse	LightingElect	3.11	0.00
tblEnergyUse	NT24E	4.16	0.00
tblEnergyUse	NT24NG	3.84	0.00
tblEnergyUse	T24E	2.39	0.00
tblEnergyUse	T24NG	17.92	0.00
tblGrading	AcresOfGrading	0.00	100.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblProjectCharacteristics	OperationalYear	2014	2021
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblSolidWaste	SolidWasteGenerationRate	4,960.00	0.00
tblTripsAndVMT	HaulingTripNumber	0.00	6,300.00
tblTripsAndVMT	HaulingTripNumber	0.00	7,350.00
tblTripsAndVMT	VendorTripNumber	0.00	20.00
tblTripsAndVMT	VendorTripNumber	656.00	40.00
tblTripsAndVMT	WorkerTripNumber	1,680.00	100.00

tblVehicleTrips	ST_TR	1.50	0.01
tblVehicleTrips	SU_TR	1.50	0.01
tblVehicleTrips	WD_TR	1.50	0.01
tblWater	IndoorWaterUseRate	925,000,000.00	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2018	2.4481	24.5218	18.0574	0.0354	4.5035	1.1166	5.6201	2.3433	1.0324	3.3757	0.0000	3,137.2920	3,137.2920	0.7834	0.0000	3,153.7441
2019	1.9003	18.5146	14.6621	0.0304	4.4770	0.8332	5.3102	2.3360	0.7710	3.1070	0.0000	2,647.0567	2,647.0567	0.6610	0.0000	2,660.9373
Total	4.3484	43.0364	32.7195	0.0658	8.9806	1.9498	10.9303	4.6793	1.8034	6.4827	0.0000	5,784.3487	5,784.3487	1.4444	0.0000	5,814.6814

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2018	0.9115	15.1673	19.7498	0.0354	2.2387	0.6485	2.8871	1.1112	0.6466	1.7578	0.0000	3,137.2890	3,137.2890	0.7834	0.0000	3,153.7410
2019	0.7667	12.8722	16.7838	0.0304	2.2122	0.5573	2.7695	1.1039	0.5557	1.6596	0.0000	2,647.0542	2,647.0542	0.6610	0.0000	2,660.9348
Total	1.6782	28.0395	36.5336	0.0658	4.4508	1.2058	5.6566	2.2151	1.2023	3.4174	0.0000	5,784.3431	5,784.3431	1.4444	0.0000	5,814.6758

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	61.41	34.85	-11.66	0.00	50.44	38.16	48.25	52.66	33.33	47.28	0.00	0.00	0.00	0.00	0.00	0.00

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	2.9305	3.4000e-004	0.0369	0.0000		1.3000e-004	1.3000e-004		1.3000e-004	1.3000e-004	0.0000	0.0715	0.0715	1.9000e-004	0.0000	0.0755
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0293	0.1068	0.3688	1.0400e-003	0.0588	2.0100e-003	0.0608	0.0158	1.8600e-003	0.0177	0.0000	75.3237	75.3237	2.0500e-003	0.0000	75.3667
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	2.9598	0.1071	0.4057	1.0400e-003	0.0588	2.1400e-003	0.0609	0.0158	1.9900e-003	0.0178	0.0000	75.3951	75.3951	2.2400e-003	0.0000	75.4421

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	2.9305	3.4000e-004	0.0369	0.0000		1.3000e-004	1.3000e-004		1.3000e-004	1.3000e-004	0.0000	0.0715	0.0715	1.9000e-004	0.0000	0.0755
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0293	0.1068	0.3688	1.0400e-003	0.0588	2.0100e-003	0.0608	0.0158	1.8600e-003	0.0177	0.0000	75.3237	75.3237	2.0500e-003	0.0000	75.3667
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	2.9598	0.1071	0.4057	1.0400e-003	0.0588	2.1400e-003	0.0609	0.0158	1.9900e-003	0.0178	0.0000	75.3951	75.3951	2.2400e-003	0.0000	75.4421

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	3/1/2018	8/7/2019	6	450	Substation prep
2	Building Construction	Building Construction	3/1/2018	11/2/2019	6	525	Substation construct

Acres of Grading (Site Preparation Phase): 100

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Cranes	2	6.00	226	0.29
Site Preparation	Excavators	2	6.00	162	0.38
Site Preparation	Off-Highway Trucks	5	6.00	400	0.38
Site Preparation	Other Construction Equipment	2	6.00	171	0.42
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Building Construction	Cranes	2	7.00	226	0.29
Building Construction	Excavators	2	6.00	162	0.38
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Off-Highway Trucks	5	6.00	400	0.38
Building Construction	Other Construction Equipment	2	6.00	171	0.42
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	2	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	18	45.00	20.00	6,300.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	20	100.00	40.00	7,350.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Site Preparation - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					4.1179	0.0000	4.1179	2.2401	0.0000	2.2401	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.2169	13.1626	8.7576	0.0149		0.6077	0.6077		0.5591	0.5591	0.0000	1,364.222 2	1,364.222 2	0.4247	0.0000	1,373.140 9
Total	1.2169	13.1626	8.7576	0.0149	4.1179	0.6077	4.7256	2.2401	0.5591	2.7992	0.0000	1,364.222 2	1,364.222 2	0.4247	0.0000	1,373.140 9

3.2 Site Preparation - 2018**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0359	0.3826	0.4416	1.3600e-003	0.0482	6.4200e-003	0.0547	0.0128	5.9100e-003	0.0187	0.0000	120.6689	120.6689	8.8000e-004	0.0000	120.6873
Vendor	0.0266	0.1926	0.3498	5.7000e-004	0.0154	3.2100e-003	0.0186	4.4200e-003	2.9500e-003	7.3700e-003	0.0000	49.7111	49.7111	4.1000e-004	0.0000	49.7197
Worker	0.0196	0.0332	0.3160	8.8000e-004	0.0733	5.1000e-004	0.0738	0.0195	4.7000e-004	0.0199	0.0000	60.1913	60.1913	2.8900e-003	0.0000	60.2519
Total	0.0821	0.6085	1.1073	2.8100e-003	0.1369	0.0101	0.1471	0.0367	9.3300e-003	0.0460	0.0000	230.5712	230.5712	4.1800e-003	0.0000	230.6589

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.8531	0.0000	1.8531	1.0081	0.0000	1.0081	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.3654	7.2038	8.7904	0.0149		0.3136	0.3136		0.3136	0.3136	0.0000	1,364.2206	1,364.2206	0.4247	0.0000	1,373.1393
Total	0.3654	7.2038	8.7904	0.0149	1.8531	0.3136	2.1666	1.0081	0.3136	1.3216	0.0000	1,364.2206	1,364.2206	0.4247	0.0000	1,373.1393

3.2 Site Preparation - 2018**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0359	0.3826	0.4416	1.3600e-003	0.0482	6.4200e-003	0.0547	0.0128	5.9100e-003	0.0187	0.0000	120.6689	120.6689	8.8000e-004	0.0000	120.6873
Vendor	0.0266	0.1926	0.3498	5.7000e-004	0.0154	3.2100e-003	0.0186	4.4200e-003	2.9500e-003	7.3700e-003	0.0000	49.7111	49.7111	4.1000e-004	0.0000	49.7197
Worker	0.0196	0.0332	0.3160	8.8000e-004	0.0733	5.1000e-004	0.0738	0.0195	4.7000e-004	0.0199	0.0000	60.1913	60.1913	2.8900e-003	0.0000	60.2519
Total	0.0821	0.6085	1.1073	2.8100e-003	0.1369	0.0101	0.1471	0.0367	9.3300e-003	0.0460	0.0000	230.5712	230.5712	4.1800e-003	0.0000	230.6589

3.2 Site Preparation - 2019**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					4.1179	0.0000	4.1179	2.2401	0.0000	2.2401	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.8076	8.5253	6.0435	0.0107		0.3894	0.3894		0.3582	0.3582	0.0000	963.0625	963.0625	0.3047	0.0000	969.4613
Total	0.8076	8.5253	6.0435	0.0107	4.1179	0.3894	4.5073	2.2401	0.3582	2.5984	0.0000	963.0625	963.0625	0.3047	0.0000	969.4613

3.2 Site Preparation - 2019**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0236	0.2502	0.2981	9.8000e-004	0.0460	4.5200e-003	0.0505	0.0120	4.1600e-003	0.0161	0.0000	85.0753	85.0753	6.2000e-004	0.0000	85.0883
Vendor	0.0168	0.1253	0.2320	4.0000e-004	0.0111	2.1100e-003	0.0132	3.1700e-003	1.9400e-003	5.1100e-003	0.0000	35.0455	35.0455	2.8000e-004	0.0000	35.0515
Worker	0.0126	0.0216	0.2046	6.3000e-004	0.0526	3.6000e-004	0.0529	0.0140	3.3000e-004	0.0143	0.0000	41.6332	41.6332	1.9300e-003	0.0000	41.6736
Total	0.0530	0.3971	0.7347	2.0100e-003	0.1097	6.9900e-003	0.1167	0.0291	6.4300e-003	0.0355	0.0000	161.7540	161.7540	2.8300e-003	0.0000	161.8135

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.8531	0.0000	1.8531	1.0081	0.0000	1.0081	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2622	5.1691	6.3076	0.0107		0.2250	0.2250		0.2250	0.2250	0.0000	963.0614	963.0614	0.3047	0.0000	969.4601
Total	0.2622	5.1691	6.3076	0.0107	1.8531	0.2250	2.0781	1.0081	0.2250	1.2331	0.0000	963.0614	963.0614	0.3047	0.0000	969.4601

3.2 Site Preparation - 2019**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0236	0.2502	0.2981	9.8000e-004	0.0460	4.5200e-003	0.0505	0.0120	4.1600e-003	0.0161	0.0000	85.0753	85.0753	6.2000e-004	0.0000	85.0883
Vendor	0.0168	0.1253	0.2320	4.0000e-004	0.0111	2.1100e-003	0.0132	3.1700e-003	1.9400e-003	5.1100e-003	0.0000	35.0455	35.0455	2.8000e-004	0.0000	35.0515
Worker	0.0126	0.0216	0.2046	6.3000e-004	0.0526	3.6000e-004	0.0529	0.0140	3.3000e-004	0.0143	0.0000	41.6332	41.6332	1.9300e-003	0.0000	41.6736
Total	0.0530	0.3971	0.7347	2.0100e-003	0.1097	6.9900e-003	0.1167	0.0291	6.4300e-003	0.0355	0.0000	161.7540	161.7540	2.8300e-003	0.0000	161.8135

3.3 Building Construction - 2018**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.0164	9.9090	6.3492	0.0132		0.4848	0.4848		0.4511	0.4511	0.0000	1,188.6491	1,188.6491	0.3464	0.0000	1,195.9244
Total	1.0164	9.9090	6.3492	0.0132		0.4848	0.4848		0.4511	0.4511	0.0000	1,188.6491	1,188.6491	0.3464	0.0000	1,195.9244

3.3 Building Construction - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0359	0.3826	0.4416	1.3600e-003	0.0550	6.4200e-003	0.0614	0.0144	5.9100e-003	0.0203	0.0000	120.6689	120.6689	8.8000e-004	0.0000	120.6873
Vendor	0.0533	0.3852	0.6995	1.1300e-003	0.0308	6.4200e-003	0.0373	8.8300e-003	5.9000e-003	0.0147	0.0000	99.4222	99.4222	8.2000e-004	0.0000	99.4394
Worker	0.0435	0.0738	0.7022	1.9500e-003	0.1628	1.1300e-003	0.1640	0.0433	1.0400e-003	0.0443	0.0000	133.7583	133.7583	6.4200e-003	0.0000	133.8931
Total	0.1327	0.8417	1.8433	4.4400e-003	0.2487	0.0140	0.2626	0.0665	0.0129	0.0794	0.0000	353.8494	353.8494	8.1200e-003	0.0000	354.0198

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.3312	6.5134	8.0088	0.0132		0.3108	0.3108		0.3108	0.3108	0.0000	1,188.6477	1,188.6477	0.3464	0.0000	1,195.9229
Total	0.3312	6.5134	8.0088	0.0132		0.3108	0.3108		0.3108	0.3108	0.0000	1,188.6477	1,188.6477	0.3464	0.0000	1,195.9229

3.3 Building Construction - 2018**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0359	0.3826	0.4416	1.3600e-003	0.0550	6.4200e-003	0.0614	0.0144	5.9100e-003	0.0203	0.0000	120.6689	120.6689	8.8000e-004	0.0000	120.6873
Vendor	0.0533	0.3852	0.6995	1.1300e-003	0.0308	6.4200e-003	0.0373	8.8300e-003	5.9000e-003	0.0147	0.0000	99.4222	99.4222	8.2000e-004	0.0000	99.4394
Worker	0.0435	0.0738	0.7022	1.9500e-003	0.1628	1.1300e-003	0.1640	0.0433	1.0400e-003	0.0443	0.0000	133.7583	133.7583	6.4200e-003	0.0000	133.8931
Total	0.1327	0.8417	1.8433	4.4400e-003	0.2487	0.0140	0.2626	0.0665	0.0129	0.0794	0.0000	353.8494	353.8494	8.1200e-003	0.0000	354.0198

3.3 Building Construction - 2019**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.9206	8.8245	6.1818	0.0133		0.4235	0.4235		0.3941	0.3941	0.0000	1,175.7453	1,175.7453	0.3458	0.0000	1,183.0071
Total	0.9206	8.8245	6.1818	0.0133		0.4235	0.4235		0.3941	0.3941	0.0000	1,175.7453	1,175.7453	0.3458	0.0000	1,183.0071

3.3 Building Construction - 2019**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0330	0.3500	0.4170	1.3700e-003	0.0550	6.3200e-003	0.0613	0.0144	5.8100e-003	0.0202	0.0000	119.0149	119.0149	8.7000e-004	0.0000	119.0331
Vendor	0.0470	0.3506	0.6492	1.1300e-003	0.0310	5.9100e-003	0.0369	8.8700e-003	5.4400e-003	0.0143	0.0000	98.0529	98.0529	8.0000e-004	0.0000	98.0696
Worker	0.0390	0.0671	0.6359	1.9500e-003	0.1635	1.1100e-003	0.1646	0.0434	1.0300e-003	0.0445	0.0000	129.4270	129.4270	5.9900e-003	0.0000	129.5527
Total	0.1191	0.7677	1.7021	4.4500e-003	0.2494	0.0133	0.2628	0.0667	0.0123	0.0790	0.0000	346.4949	346.4949	7.6600e-003	0.0000	346.6555

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.3325	6.5383	8.0394	0.0133		0.3120	0.3120		0.3120	0.3120	0.0000	1,175.7439	1,175.7439	0.3458	0.0000	1,183.0057
Total	0.3325	6.5383	8.0394	0.0133		0.3120	0.3120		0.3120	0.3120	0.0000	1,175.7439	1,175.7439	0.3458	0.0000	1,183.0057

3.3 Building Construction - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0330	0.3500	0.4170	1.3700e-003	0.0550	6.3200e-003	0.0613	0.0144	5.8100e-003	0.0202	0.0000	119.0149	119.0149	8.7000e-004	0.0000	119.0331
Vendor	0.0470	0.3506	0.6492	1.1300e-003	0.0310	5.9100e-003	0.0369	8.8700e-003	5.4400e-003	0.0143	0.0000	98.0529	98.0529	8.0000e-004	0.0000	98.0696
Worker	0.0390	0.0671	0.6359	1.9500e-003	0.1635	1.1100e-003	0.1646	0.0434	1.0300e-003	0.0445	0.0000	129.4270	129.4270	5.9900e-003	0.0000	129.5527
Total	0.1191	0.7677	1.7021	4.4500e-003	0.2494	0.0133	0.2628	0.0667	0.0123	0.0790	0.0000	346.4949	346.4949	7.6600e-003	0.0000	346.6555

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0293	0.1068	0.3688	1.0400e-003	0.0588	2.0100e-003	0.0608	0.0158	1.8600e-003	0.0177	0.0000	75.3237	75.3237	2.0500e-003	0.0000	75.3667
Unmitigated	0.0293	0.1068	0.3688	1.0400e-003	0.0588	2.0100e-003	0.0608	0.0158	1.8600e-003	0.0177	0.0000	75.3237	75.3237	2.0500e-003	0.0000	75.3667

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Heavy Industry	40.00	40.00	40.00	154,539	154,539
Total	40.00	40.00	40.00	154,539	154,539

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Heavy Industry	14.70	6.60	6.60	59.00	28.00	13.00	92	5	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.409403	0.062545	0.156224	0.176363	0.050982	0.007863	0.019891	0.103627	0.001777	0.001579	0.006540	0.000887	0.002320

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

[illegible]

5.2 Energy by Land Use - NaturalGas

Unmitigated

[illegible]

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Heavy Industry	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Heavy Industry	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Heavy Industry	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	2.9305	3.4000e-004	0.0369	0.0000		1.3000e-004	1.3000e-004		1.3000e-004	1.3000e-004	0.0000	0.0715	0.0715	1.9000e-004	0.0000	0.0755
Unmitigated	2.9305	3.4000e-004	0.0369	0.0000		1.3000e-004	1.3000e-004		1.3000e-004	1.3000e-004	0.0000	0.0715	0.0715	1.9000e-004	0.0000	0.0755

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	2.7810					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1460					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	3.4500e-003	3.4000e-004	0.0369	0.0000		1.3000e-004	1.3000e-004		1.3000e-004	1.3000e-004	0.0000	0.0715	0.0715	1.9000e-004	0.0000	0.0755
Total	2.9305	3.4000e-004	0.0369	0.0000		1.3000e-004	1.3000e-004		1.3000e-004	1.3000e-004	0.0000	0.0715	0.0715	1.9000e-004	0.0000	0.0755

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	2.7810					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1460					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	3.4500e-003	3.4000e-004	0.0369	0.0000		1.3000e-004	1.3000e-004		1.3000e-004	1.3000e-004	0.0000	0.0715	0.0715	1.9000e-004	0.0000	0.0755
Total	2.9305	3.4000e-004	0.0369	0.0000		1.3000e-004	1.3000e-004		1.3000e-004	1.3000e-004	0.0000	0.0715	0.0715	1.9000e-004	0.0000	0.0755

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Heavy Industry	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Heavy Industry	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Heavy Industry	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Heavy Industry	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
----------------	--------	-----------	-----------	-------------	-------------	-----------

10.0 Vegetation

Appendix J

Consultant Disclosure Statements

NEPA DISCLOSURE STATEMENT FOR PREPARATION OF THE

San Luis Transmission Project Draft Environmental Impact Statement DOE/EIS-0496

CEQ Regulations at 40 CFR 1506.5(c), which have been adopted by the DOE (10 CFR 1021), require contractors who will prepare an EIS to execute a disclosure specifying that they have no financial or other interest in the outcome of the project. The term "financial interest or other interest in the outcome of the project" for purposes of this disclosure is defined in the March 23, 1981 guidance "Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations," 46 FR 8026-18038 at Question 17a and b.

"Financial or other interest in the outcome of the project" includes "any financial benefit such as a promise of future construction or design work in the project, as well as indirect benefits the contractor is aware of (e.g., if the project would aid proposals sponsored by the firm's other clients)." 46 FR 18026-18038 at 18031.

In accordance with these requirements, the signatory certifies that he or she has no financial or other interest in the outcome of the project.

Certified by:



Signature

Tom Murphy, Vice President
Printed Name and Title

Aspen Environmental Group
Company

11/17/15
Date

NEPA DISCLOSURE STATEMENT FOR PREPARATION OF THE

San Luis Transmission Project Draft Environmental Impact Statement DOE/EIS-0496

CEQ Regulations at 40 CFR 1506.5(c), which have been adopted by the DOE (10 CFR 1021), require contractors who will prepare an EIS to execute a disclosure specifying that they have no financial or other interest in the outcome of the project. The term "financial interest or other interest in the outcome of the project" for purposes of this disclosure is defined in the March 23, 1981 guidance "Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations," 46 FR 8026-18038 at Question 17a and b.

"Financial or other interest in the outcome of the project" includes "any financial benefit such as a promise of future construction or design work in the project, as well as indirect benefits the contractor is aware of (e.g., if the project would aid proposals sponsored by the firm's other clients)." 46 FR 18026-18038 at 18031.

In accordance with these requirements, the signatory certifies that he or she has no financial or other interest in the outcome of the project.

Certified by:



Signature

Heather Blair, Sr. Associate

Printed Name and Title

Aspen Environmental Group

Company

6/29/15

Date

NEPA DISCLOSURE STATEMENT FOR PREPARATION OF THE

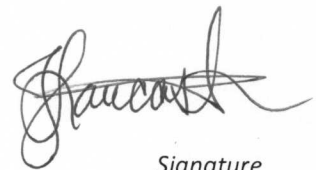
San Luis Transmission Project Draft Environmental Impact Statement DOE/EIS-0496

CEQ Regulations at 40 CFR 1506.5(c), which have been adopted by the DOE (10 CFR 1021), require contractors who will prepare an EIS to execute a disclosure specifying that they have no financial or other interest in the outcome of the project. The term "financial interest or other interest in the outcome of the project" for purposes of this disclosure is defined in the March 23, 1981 guidance "Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations," 46 FR 8026-18038 at Question 17a and b.

"Financial or other interest in the outcome of the project" includes "any financial benefit such as a promise of future construction or design work in the project, as well as indirect benefits the contractor is aware of (e.g., if the project would aid proposals sponsored by the firm's other clients)." 46 FR 18026-18038 at 18031.

In accordance with these requirements, the signatory certifies that he or she has no financial or other interest in the outcome of the project.

Certified by:



Signature

JENNIFER LANCASTER, BIOLOGIST
Printed Name and Title

ASPEN ENVIRONMENTAL GROUP
Company

6/30/15
Date

NEPA DISCLOSURE STATEMENT FOR PREPARATION OF THE

San Luis Transmission Project Draft Environmental Impact Statement DOE/EIS-0496

CEQ Regulations at 40 CFR 1506.5(c), which have been adopted by the DOE (10 CFR 1021), require contractors who will prepare an EIS to execute a disclosure specifying that they have no financial or other interest in the outcome of the project. The term "financial interest or other interest in the outcome of the project" for purposes of this disclosure is defined in the March 23, 1981 guidance "Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations," 46 FR 8026-18038 at Question 17a and b.

"Financial or other interest in the outcome of the project" includes "any financial benefit such as a promise of future construction or design work in the project, as well as indirect benefits the contractor is aware of (e.g., if the project would aid proposals sponsored by the firm's other clients)." 46 FR 18026-18038 at 18031.

In accordance with these requirements, the signatory certifies that he or she has no financial or other interest in the outcome of the project.

Certified by:



Signature

Moselle Difane, staff environmental Scientist
Printed Name and Title

Aspen Environmental Group
Company

10-23-15
Date

NEPA DISCLOSURE STATEMENT FOR PREPARATION OF THE

San Luis Transmission Project Draft Environmental Impact Statement DOE/EIS-0496

CEQ Regulations at 40 CFR 1506.5(c), which have been adopted by the DOE (10 CFR 1021), require contractors who will prepare an EIS to execute a disclosure specifying that they have no financial or other interest in the outcome of the project. The term "financial interest or other interest in the outcome of the project" for purposes of this disclosure is defined in the March 23, 1981 guidance "Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations," 46 FR 8026-18038 at Question 17a and b.

"Financial or other interest in the outcome of the project" includes "any financial benefit such as a promise of future construction or design work in the project, as well as indirect benefits the contractor is aware of (e.g., if the project would aid proposals sponsored by the firm's other clients)." 46 FR 18026-18038 at 18031.

In accordance with these requirements, the signatory certifies that he or she has no financial or other interest in the outcome of the project.

Certified by:



Signature

Matthew Trask
Senior Associate

Printed Name and Title

Aspen Environmental Group
Company

9/30/14
Date

NEPA DISCLOSURE STATEMENT FOR PREPARATION OF THE

San Luis Transmission Project Draft Environmental Impact Statement DOE/EIS-0496

CEQ Regulations at 40 CFR 1506.5(c), which have been adopted by the DOE (10 CFR 1021), require contractors who will prepare an EIS to execute a disclosure specifying that they have no financial or other interest in the outcome of the project. The term "financial interest or other interest in the outcome of the project" for purposes of this disclosure is defined in the March 23, 1981 guidance "Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations," 46 FR 8026-18038 at Question 17a and b.

"Financial or other interest in the outcome of the project" includes "any financial benefit such as a promise of future construction or design work in the project, as well as indirect benefits the contractor is aware of (e.g., if the project would aid proposals sponsored by the firm's other clients)." 46 FR 18026-18038 at 18031.

In accordance with these requirements, the signatory certifies that he or she has no financial or other interest in the outcome of the project.

Certified by:

Elizabeth A. Bagwell

Signature

Elizabeth A. Bagwell, PhD,
Printed Name and Title RPA

Aspen Environmental Group
Company

6/29/15
Date

NEPA DISCLOSURE STATEMENT FOR PREPARATION OF THE

San Luis Transmission Project Draft Environmental Impact Statement DOE/EIS-0496

CEQ Regulations at 40 CFR 1506.5(c), which have been adopted by the DOE (10 CFR 1021), require contractors who will prepare an EIS to execute a disclosure specifying that they have no financial or other interest in the outcome of the project. The term "financial interest or other interest in the outcome of the project" for purposes of this disclosure is defined in the March 23, 1981 guidance "Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations," 46 FR 8026-18038 at Question 17a and b.

"Financial or other interest in the outcome of the project" includes "any financial benefit such as a promise of future construction or design work in the project, as well as indirect benefits the contractor is aware of (e.g., if the project would aid proposals sponsored by the firm's other clients)." 46 FR 18026-18038 at 18031.

In accordance with these requirements, the signatory certifies that he or she has no financial or other interest in the outcome of the project.

Certified by:



Signature

JAMES BREWSTER BIRDSELL

Printed Name and Title

ASPEX ENVTL.
GROUP.

S.R. ASSOC.

Company

10/27/2015

Date

NEPA DISCLOSURE STATEMENT FOR PREPARATION OF THE

San Luis Transmission Project Draft Environmental Impact Statement DOE/EIS-0496

CEQ Regulations at 40 CFR 1506.5(c), which have been adopted by the DOE (10 CFR 1021), require contractors who will prepare an EIS to execute a disclosure specifying that they have no financial or other interest in the outcome of the project. The term "financial interest or other interest in the outcome of the project" for purposes of this disclosure is defined in the March 23, 1981 guidance "Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations," 46 FR 8026-18038 at Question 17a and b.

"Financial or other interest in the outcome of the project" includes "any financial benefit such as a promise of future construction or design work in the project, as well as indirect benefits the contractor is aware of (e.g., if the project would aid proposals sponsored by the firm's other clients)." 46 FR 18026-18038 at 18031.

In accordance with these requirements, the signatory certifies that he or she has no financial or other interest in the outcome of the project.

Certified by:



Signature

Anne Wallace
wildlife biologist

Printed Name and Title

EcoBridges
Environmental

Company

6/29/15

Date

NEPA DISCLOSURE STATEMENT FOR PREPARATION OF THE

San Luis Transmission Project Draft Environmental Impact Statement DOE/EIS-0496

CEQ Regulations at 40 CFR 1506.5(c), which have been adopted by the DOE (10 CFR 1021), require contractors who will prepare an EIS to execute a disclosure specifying that they have no financial or other interest in the outcome of the project. The term "financial interest or other interest in the outcome of the project" for purposes of this disclosure is defined in the March 23, 1981 guidance "Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations," 46 FR 8026-18038 at Question 17a and b.

"Financial or other interest in the outcome of the project" includes "any financial benefit such as a promise of future construction or design work in the project, as well as indirect benefits the contractor is aware of (e.g., if the project would aid proposals sponsored by the firm's other clients)." 46 FR 18026-18038 at 18031.

In accordance with these requirements, the signatory certifies that he or she has no financial or other interest in the outcome of the project.

Certified by:



Signature

JOHN HOLSON, DM
Printed Name and Title

Pacific Legacy Inc.
Company

10-28-2015
Date

NEPA DISCLOSURE STATEMENT FOR PREPARATION OF THE

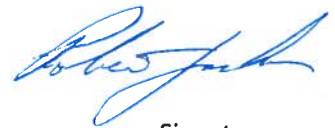
San Luis Transmission Project Draft Environmental Impact Statement DOE/EIS-0496

CEQ Regulations at 40 CFR 1506.5(c), which have been adopted by the DOE (10 CFR 1021), require contractors who will prepare an EIS to execute a disclosure specifying that they have no financial or other interest in the outcome of the project. The term "financial interest or other interest in the outcome of the project" for purposes of this disclosure is defined in the March 23, 1981 guidance "Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations," 46 FR 8026-18038 at Question 17a and b.

"Financial or other interest in the outcome of the project" includes "any financial benefit such as a promise of future construction or design work in the project, as well as indirect benefits the contractor is aware of (e.g., if the project would aid proposals sponsored by the firm's other clients)." 46 FR 18026-18038 at 18031.

In accordance with these requirements, the signatory certifies that he or she has no financial or other interest in the outcome of the project.

Certified by:



Signature

Robert Jackson, CEO
Printed Name and Title

Pacific Legacy
Company

6/29/15
Date

NEPA DISCLOSURE STATEMENT FOR PREPARATION OF THE

San Luis Transmission Project Draft Environmental Impact Statement DOE/EIS-0496

CEQ Regulations at 40 CFR 1506.5(c), which have been adopted by the DOE (10 CFR 1021), require contractors who will prepare an EIS to execute a disclosure specifying that they have no financial or other interest in the outcome of the project. The term "financial interest or other interest in the outcome of the project" for purposes of this disclosure is defined in the March 23, 1981 guidance "Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations," 46 FR 8026-18038 at Question 17a and b.

"Financial or other interest in the outcome of the project" includes "any financial benefit such as a promise of future construction or design work in the project, as well as indirect benefits the contractor is aware of (e.g., if the project would aid proposals sponsored by the firm's other clients)." 46 FR 18026-18038 at 18031.

In accordance with these requirements, the signatory certifies that he or she has no financial or other interest in the outcome of the project.

Certified by:

Signature

Joan Holm Supervisor

Printed Name and Title

Pacific Legacy Inc.
Company

10/27/15
Date

NEPA DISCLOSURE STATEMENT FOR PREPARATION OF THE

San Luis Transmission Project Draft Environmental Impact Statement DOE/EIS-0496

CEQ Regulations at 40 CFR 1506.5(c), which have been adopted by the DOE (10 CFR 1021), require contractors who will prepare an EIS to execute a disclosure specifying that they have no financial or other interest in the outcome of the project. The term "financial interest or other interest in the outcome of the project" for purposes of this disclosure is defined in the March 23, 1981 guidance "Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations," 46 FR 8026-18038 at Question 17a and b.

"Financial or other interest in the outcome of the project" includes "any financial benefit such as a promise of future construction or design work in the project, as well as indirect benefits the contractor is aware of (e.g., if the project would aid proposals sponsored by the firm's other clients)." 46 FR 18026-18038 at 18031.

In accordance with these requirements, the signatory certifies that he or she has no financial or other interest in the outcome of the project.

Certified by:



Signature

Elena Lyn Reese,
Printed Name and Title
Historic Archaeologist

Pacific Legacy
Company

10/30/2015
Date

NEPA DISCLOSURE STATEMENT FOR PREPARATION OF THE

San Luis Transmission Project Draft Environmental Impact Statement DOE/EIS-0496

CEQ Regulations at 40 CFR 1506.5(c), which have been adopted by the DOE (10 CFR 1021), require contractors who will prepare an EIS to execute a disclosure specifying that they have no financial or other interest in the outcome of the project. The term "financial interest or other interest in the outcome of the project" for purposes of this disclosure is defined in the March 23, 1981 guidance "Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations," 46 FR 8026-18038 at Question 17a and b.

"Financial or other interest in the outcome of the project" includes "any financial benefit such as a promise of future construction or design work in the project, as well as indirect benefits the contractor is aware of (e.g., if the project would aid proposals sponsored by the firm's other clients)." 46 FR 18026-18038 at 18031.

In accordance with these requirements, the signatory certifies that he or she has no financial or other interest in the outcome of the project.

Certified by:



Signature

RHEA SANCHEZ
ARCHAEOLOGICAL TECHNICIAN

Printed Name and Title

PACIFIC LEGACY

Company

10/28/15

Date

NEPA DISCLOSURE STATEMENT FOR PREPARATION OF THE

San Luis Transmission Project Draft Environmental Impact Statement DOE/EIS-0496

CEQ Regulations at 40 CFR 1506.5(c), which have been adopted by the DOE (10 CFR 1021), require contractors who will prepare an EIS to execute a disclosure specifying that they have no financial or other interest in the outcome of the project. The term "financial interest or other interest in the outcome of the project" for purposes of this disclosure is defined in the March 23, 1981 guidance "Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations," 46 FR 8026-18038 at Question 17a and b.

"Financial or other interest in the outcome of the project" includes "any financial benefit such as a promise of future construction or design work in the project, as well as indirect benefits the contractor is aware of (e.g., if the project would aid proposals sponsored by the firm's other clients)." 46 FR 18026-18038 at 18031.

In accordance with these requirements, the signatory certifies that he or she has no financial or other interest in the outcome of the project.

Certified by:



Signature

HANNAH BALLARD

SENIOR ARCHAEOLOGIST

Printed Name and Title

PACIFIC LEGACY, INC

Company

10/27/15

Date

NEPA DISCLOSURE STATEMENT FOR PREPARATION OF THE

San Luis Transmission Project Draft Environmental Impact Statement DOE/EIS-0496

CEQ Regulations at 40 CFR 1506.5(c), which have been adopted by the DOE (10 CFR 1021), require contractors who will prepare an EIS to execute a disclosure specifying that they have no financial or other interest in the outcome of the project. The term "financial interest or other interest in the outcome of the project" for purposes of this disclosure is defined in the March 23, 1981 guidance "Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations," 46 FR 8026-18038 at Question 17a and b.

"Financial or other interest in the outcome of the project" includes "any financial benefit such as a promise of future construction or design work in the project, as well as indirect benefits the contractor is aware of (e.g., if the project would aid proposals sponsored by the firm's other clients)." 46 FR 18026-18038 at 18031.

In accordance with these requirements, the signatory certifies that he or she has no financial or other interest in the outcome of the project.

Certified by:



Signature

Shanna Streich

Printed Name and Title

Pacific Legacy, Inc.
Company

10/27/15
Date

NEPA DISCLOSURE STATEMENT FOR PREPARATION OF THE

San Luis Transmission Project Draft Environmental Impact Statement DOE/EIS-0496

CEQ Regulations at 40 CFR 1506.5(c), which have been adopted by the DOE (10 CFR 1021), require contractors who will prepare an EIS to execute a disclosure specifying that they have no financial or other interest in the outcome of the project. The term "financial interest or other interest in the outcome of the project" for purposes of this disclosure is defined in the March 23, 1981 guidance "Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations," 46 FR 8026-18038 at Question 17a and b.

"Financial or other interest in the outcome of the project" includes "any financial benefit such as a promise of future construction or design work in the project, as well as indirect benefits the contractor is aware of (e.g., if the project would aid proposals sponsored by the firm's other clients)." 46 FR 18026-18038 at 18031.

In accordance with these requirements, the signatory certifies that he or she has no financial or other interest in the outcome of the project.

Certified by:



Signature

Amy Kovak - Project Supervisor
Printed Name and Title

Pacific Legacy, Inc.
Company

6/29/15
Date

NEPA DISCLOSURE STATEMENT FOR PREPARATION OF THE

San Luis Transmission Project Draft Environmental Impact Statement DOE/EIS-0496

CEQ Regulations at 40 CFR 1506.5(c), which have been adopted by the DOE (10 CFR 1021), require contractors who will prepare an EIS to execute a disclosure specifying that they have no financial or other interest in the outcome of the project. The term "financial interest or other interest in the outcome of the project" for purposes of this disclosure is defined in the March 23, 1981 guidance "Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations," 46 FR 8026-18038 at Question 17a and b.

"Financial or other interest in the outcome of the project" includes "any financial benefit such as a promise of future construction or design work in the project, as well as indirect benefits the contractor is aware of (e.g., if the project would aid proposals sponsored by the firm's other clients)." 46 FR 18026-18038 at 18031.

In accordance with these requirements, the signatory certifies that he or she has no financial or other interest in the outcome of the project.

Certified by:


Signature

Starla Lane, Supervisor
Printed Name and Title

Pacific Legacy, Inc.
Company

10/28/15
Date

Appendix K

Cost Analysis

Cost Analysis

This cost analysis was prepared by the Bureau of Reclamation, with input from Duke American Transmission Company (DATC), who has a pending transmission service request in the SLTP corridor. It is intended to disclose the rationale behind the economic need for the San Luis Transmission Project and the economic feasibility of implementing the No Action/No Project Alternative.

As stated in EIS/EIR Section 1.2 (Purpose and Need), an existing transmission service agreement with PG&E to deliver CVP-produced hydroelectric generation from Western's Tracy Substation to serve Reclamation's share of the San Luis Unit facilities near Santa Nella and Los Banos expires on March 31, 2016. To replace this transmission service contract, the objectives of the project, as stated in EIS/EIR Section 1.3 (Project Objectives) include obtaining durable, cost-certain and cost-effective transmission to meet the energy delivery needs of Reclamation and the Authority for at least 50 years. This would ensure compliance with the statutory direction set forth in the authorization of the SLU (San Luis Unit, Central Valley Project, Act of June 3, 1960, Public Law 86-488, 74 Stat. 156) which provides in part that no transmission facilities associated with the SLU can be constructed if a contract can be obtained at lesser cost over a 50-year period. As no replacement contract to the expiring contract is available, cost and benefit comparisons to determine the least cost, most durable and stable transmission options have been prepared by Reclamation. The options analyzed are described as follows:

- **No Action/No Project Alternative.** Under this Alternative, Western would arrange for transmission service for the San Luis Unit from CAISO through the use of existing transmission infrastructure. The cost of this Alternative is based on the CAISO tariff and forecasts of its costs over the term of evaluation.
- **Operational Voltage Option – 230-kV Transmission Line.** This operational voltage option would entail constructing a 230-kV transmission line with between 400 MW and 600 MW capacity between the Tracy Substation and the SLU facilities to include substation improvements and a 70-kV transmission line from the San Luis Substation to the O'Neill Substation. It would be included in the Balancing Authority of Northern California (BANC) which is necessary to achieve the long-term stable, durable and cost-effective transmission objectives of the project. The EIS/EIR evaluates the impacts of building a 230-kV line between the San Luis and Dos Amigos Substations to serve the federal pumping load at Dos Amigos pumping plant.
- **Proposed Project.** The Proposed Project would be co-funded by the Authority (400 megawatt (MW) capacity) and DATC (1200 MW capacity). The Authority's portion would meet the purpose and need and project objectives explained above. DATC's portion would be included in the CAISO balancing authority, funded by DATC, and its investment recovered by the CAISO through its transmission rates and payments to DATC based on rates of return which the Federal Energy Regulatory Commission determines to be just, reasonable and not unduly discriminatory.

The options listed above are evaluated using the federal share of the San Luis Unit pumping loads over the period of fiscal year 1997 to fiscal year 2014 (Reclamation Historical Database):

Table K-1

	Low MWh	Weighted Average MWh	High MWh
Dos Amigos pumping load (230-kV):	37,971	130,238	180,064
San Luis pumping load (230-kV):	116,482	228,618	352,025
O'Neill pumping load (70-kV):	35,891	73,134	102,591
San Luis generation (230-kV):	53,557	130,872	195,287
O'Neill generation (70-kV):	34	4,933	9,440

K.1 No Action/No Project Alternative – CAISO Tariff

Section 26 of the current CAISO tariff (dated June 12, 2015; CAISO, 2015a) relates to Transmission Rates and Charges which describes their process for calculating and assessing rates for those entities utilizing the CAISO transmission system. In general, a Transmission Access Charge (TAC) is assessed to loads being served in the CAISO Balancing Authority (BA) or generation exports for the purpose of recovering transmission revenue requirements. There is a High Voltage (HV) rate for facilities rated 200-kV and above and a Low Voltage (LV) rate based on regional areas for facilities below 200-kV. For the loads to be served by the SLTP, both a HV and LV TAC would be assessed the federal load at the O'Neill Pump-generating station as it is connected to the CAISO Grid at 70-kV, whereas the remaining loads would be charged only the HVTAC. All loads would also be charged transaction fees provided for in the CAISO tariff on each megawatt hour (MWh) delivered, such as ancillary service charges, Grid Management charge, resource adequacy charge, etc. Figure 1 shows the HV and LV TAC at various tariff revisions since their inception in 2001 based on information at the CAISO website and High Voltage rates archive (CAISO, 2015b).

As shown in Figure 1, the HV TAC was \$1.30/MWh and the LV TAC was \$1.72/MWh in 2001.¹ There have been over 75 changes (increases and decreases) since that time. The August 2015 HV and LV TAC are now \$9.7986 and \$6.6096 per MWh, respectively. Combined, their increase is about 444% greater than in 2001. The HV TAC has increased at an average annual compounding rate of over 14% for the past 15 years. During the same period of time, PG&E's LV TAC increased at an average annual compounding rate greater than 10%.

Resource Adequacy (RA) is a CAISO requirement where generation capacity is committed to CAISO to ensure that their load demand can be met at all times. The cost for providing RA for the San Luis, Dos Amigos, and O'Neill pumping loads is estimated to be \$2 per MWh. For entities that operate generation facilities or load, there are a collection of other CAISO costs that are allocated to the load, such as scheduling coordinator, settlements, imbalance, grid management, which are estimated to be about \$6/MWh.

Related to serving the SLU Federal loads, both the HV and LV TAC are used to determine the transmission cost of using the CAISO transmission system. The HV TAC is assessed using the San Luis and Dos Amigos pumping loads and the HV plus LV TAC are assessed using the O'Neill pumping load; the RA and other CAISO costs are also added. Table K-2 provides the federal share of generation and pumping of the San Luis Unit facilities.

¹ All monetary amounts are in 2015 U.S. dollars

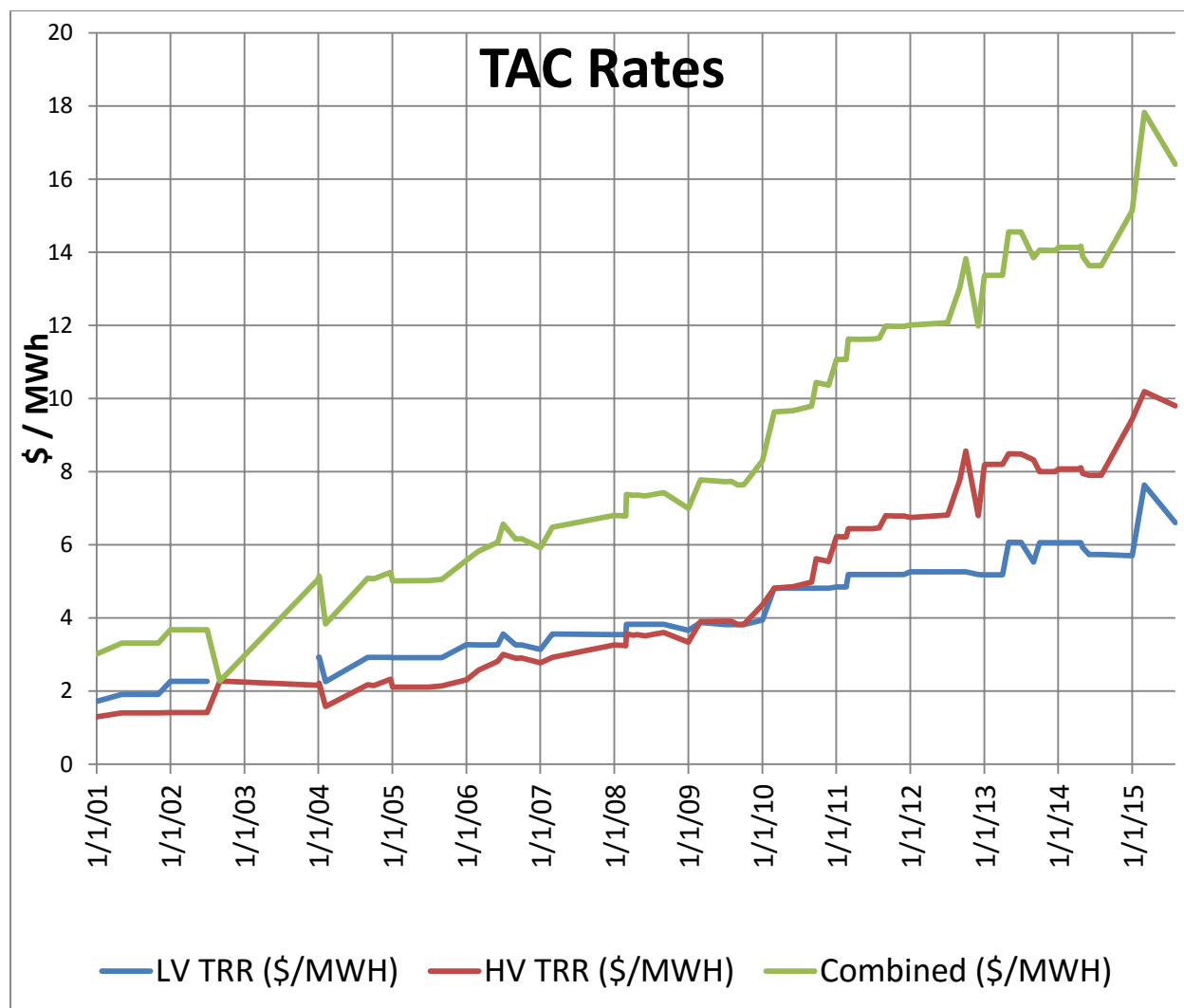


Figure 1. TAC Rates

Table K-2

	MWh	TAC + RA + Other	Oct 2015 Cost
Average Dos Amigos and San Luis load	358,856	\$17.7986	\$6,387,134
Average O'Neill load	73,130	\$24.4082	\$1,784,971
Total annual cost for using CAISO transmission			\$8,172,135

Although historically, there have been periods where the CAISO HV and LV TAC have decreased, the trend is generally upward. The most significant events that drive the CAISO TAC are the transmission revenue requirements associated with the transmission systems. The revenue requirement increases whenever new transmission infrastructure is constructed in the CAISO BA to serve increasing load growth or maintain reliability and integrity of the transmission system. With the increasing need to provide transmission system expansion in the next few years, CAISO actively leads a transmission planning process that evaluates grid reliability requirements and projects. Each year, CAISO issues a transmission plan

which includes a listing of future projects. Once these projects are completed, the CAISO transmission revenue requirement will also increase accordingly when approval by the Federal Energy Regulatory Commission (FERC) is obtained.

For the No Action/No Project Alternative, increases in the HV TAC were forecasted. This forecast was based on the cost of approved projects in the CAISO 2014-2015 Transmission Plan and their calculated impact on the existing TACs, with an inflation-based increase for the later part of the evaluation period (Base Forecast). The forecast HV TAC costs are shown in Figure 2.

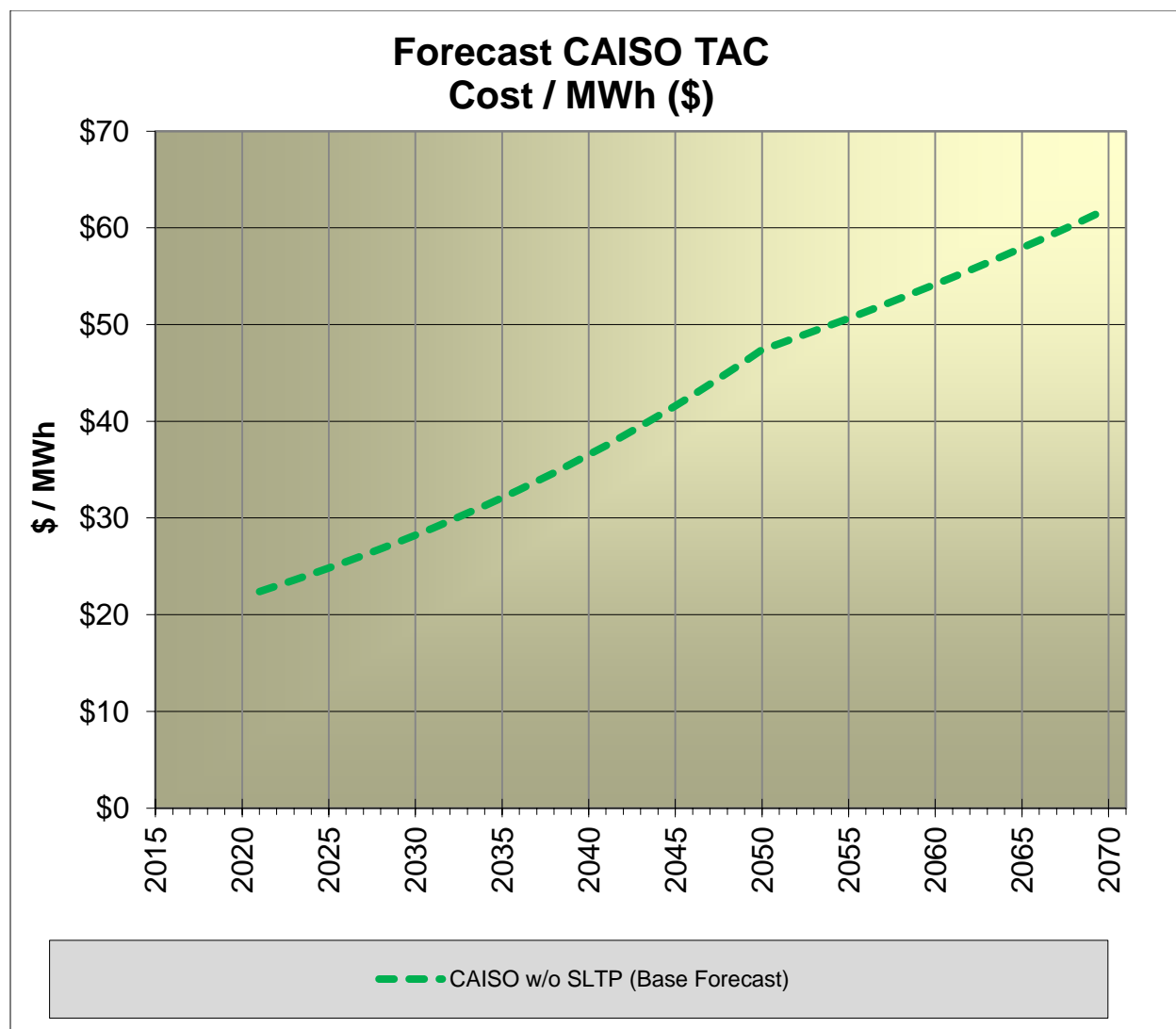


Figure 2. Forecast CAISO HV TAC

K.2 Operational Voltage Option – 230-kV Transmission Line

The October 2015 cost estimate to construct a 230-KV transmission line from Tracy Substation to San Luis Substation, a 70-KV transmission line from San Luis Substation to O'Neill Substation, and a 230-KV transmission line from San Luis to Dos Amigos to include all associated high-voltage equipment necessary for the interconnections and including contingency is shown below. In addition, to evaluate the cost over a 50-year service life, the following values were used:

■ Tracy-San Luis Section (400 MW)	\$175,000,000
■ Tracy-San Luis Section (600 MW)	\$220,000,000
■ San Luis-Dos Amigos Section (400 MW)	\$33,000,000
■ Cost of Capital	5%
■ Inflation Rate	2%
■ Initial O&M (annual)	\$530,000
■ Years of Debt Amortization:	50
■ Years of Project Life	50
■ Third Party Revenues (annual)	\$1,000,000

Reclamation used the above values to estimate benefits of each option analyzed versus the costs of each option. The results are shown in a benefit to cost ratio (expressed as benefits over cost) or B/C. If benefits exceed cost, then the B/C ratio would be greater than 1 (one). If benefits are less than the costs, the B/C ratio would be less than 1 (one). The higher the B/C ratio the better the investment. The B/C ratio calculations based on the values described above are as follows for the Base TAC Forecast:

■ Tracy-San Luis-Dos Amigos (400 MW)	1.10
■ Tracy-San Luis (400 MW)	2.06
■ Tracy-San Luis-Dos Amigos (600 MW)	0.91
■ Tracy-San Luis-Dos Amigos (share of 500-KV)	2.38

Superimposing the present worth analysis on the forecast TAC is shown in Figures 3 through 5.

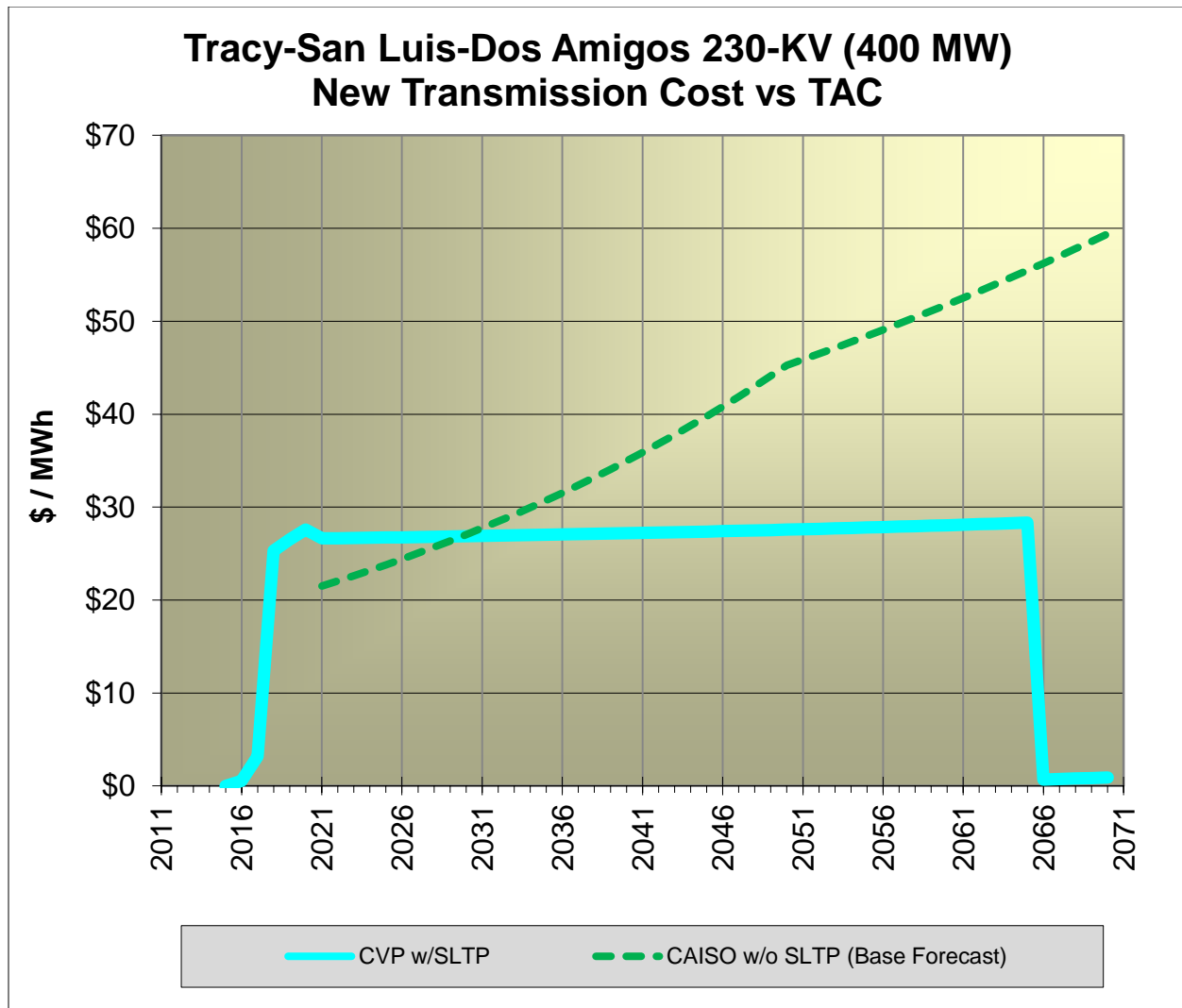


Figure 3.
Tracy-San Luis-Dos Amigos (400 MW) New Transmission Cost / MWh (\$) vs. TAC

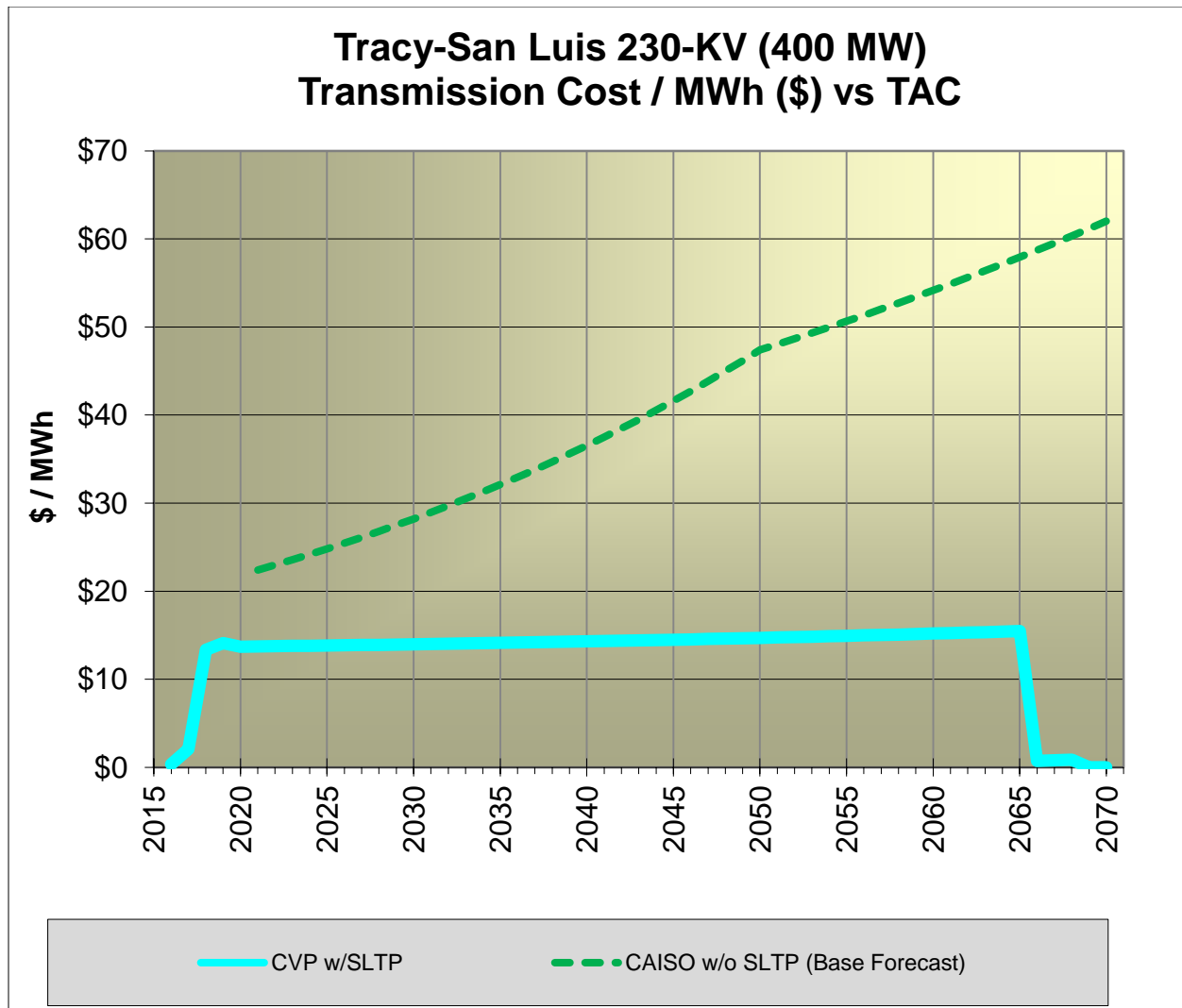


Figure 4.
Tracy-San Luis 230-kV (400 MW) Transmission Cost / MWh (\$) vs. TAC

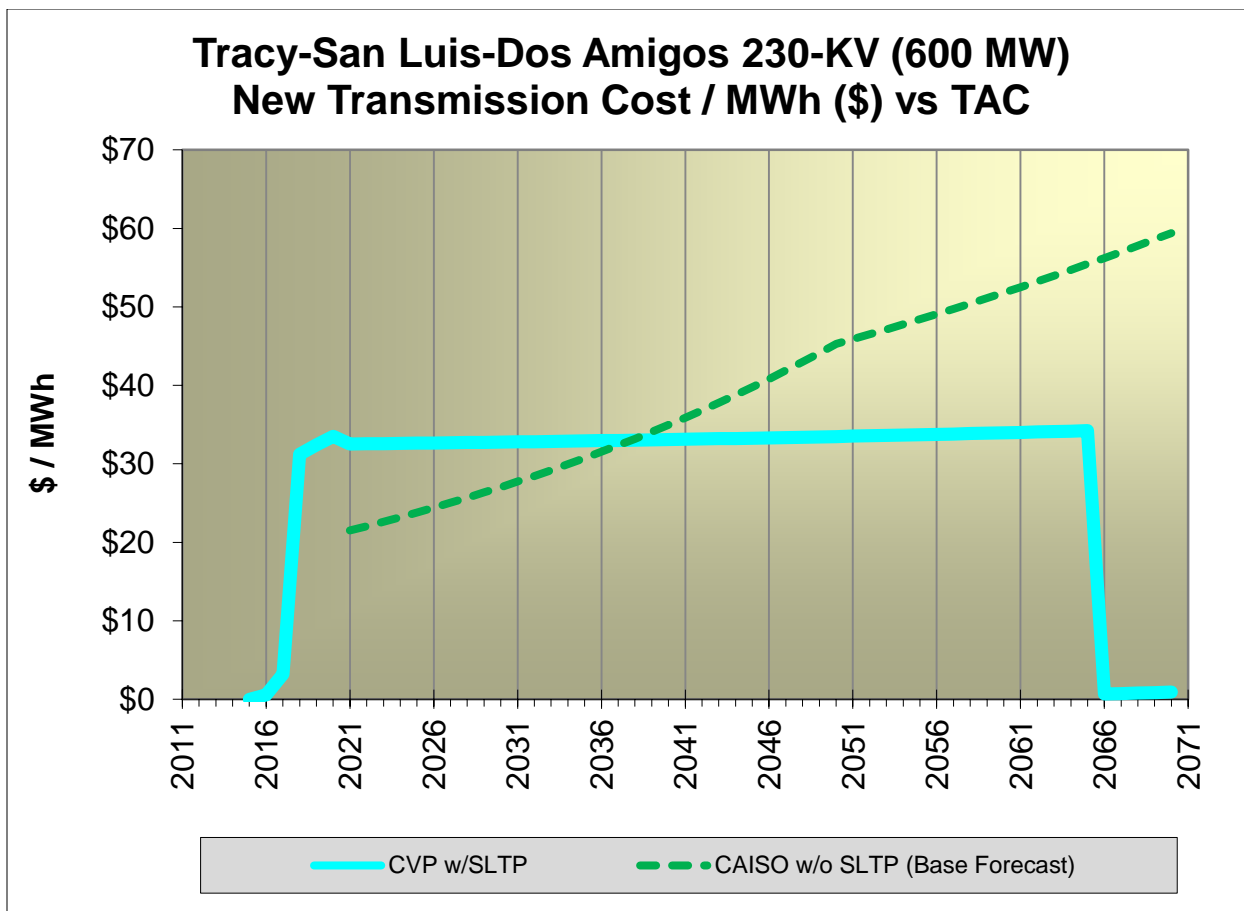


Figure 5.
Tracy-San Luis-Dos Amigos 230-kV (600 MW) New Transmission Cost / MWh (\$) vs. TAC

K.3 Proposed Project

The cost for a 500-kV transmission line from Tracy to the Los Banos area with 230-kV interconnections to San Luis and Dos Amigos and associated substation facilities is approximately \$396,000,000.² It is anticipated that 400 MW of the 1600 MW capacity of the 500-kV transmission line would be allocated directly to serve the Reclamation San Luis and Dos Amigos pumping loads. This equates to \$99,000,000. Based on the assumptions in Section K.2 for a \$99 million project, the Benefit/Cost ratio for Tracy-San Luis (400 MW share of 500-kV Project) is 2.38.

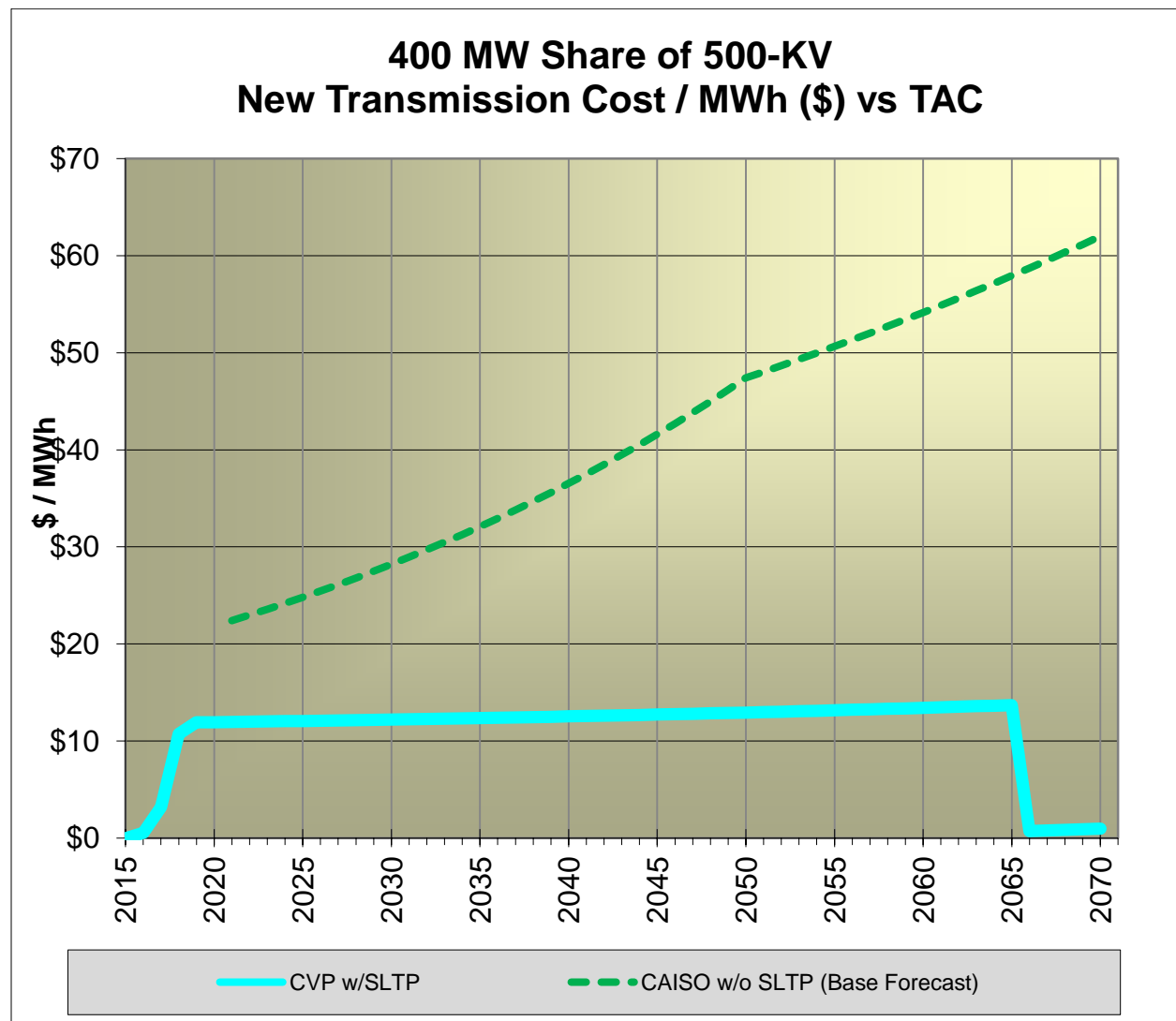


Figure 6.
400 MW Share of 500-kV New Transmission Cost / MWh (\$) vs. TAC

² Estimated using July 2014 USD and escalated to 2015 USD.

References

CAISO 2015a. http://www.caiso.com/Documents/ConformedTariff_Jun12_2015.pdf. Accessed October 2015.

CAISO 2015b. <https://www.caiso.com/market//Pages/Settlements/SettlementsArchive/Default.aspx>
Accessed October 2015.

Appendix L

Draft EIS/EIR Comments and Responses

Draft EIS/EIR Comments and Responses

This appendix presents the comments received by Western and the Authority on the Draft EIS/EIR, the lead agencies' responses to each of the comments, and reproductions of the comment correspondence with brackets and comment identification numbers.

L.1 Summary of Comments Received on the Draft EIS/EIR

To facilitate review of the comments received and the lead agencies' responses to them, each comment correspondence (i.e., letter, email, comment card, or meeting transcript) was assigned a letter corresponding to the following categories of commenters:

- A. Public Agencies
- B. Organizations
- C. Individuals
- D. Public Meetings

Each comment correspondence was numbered chronologically within each category according to the date the comment correspondence was received; this designation is referred to as the "comment set." Each individual comment within each comment set was then identified with a bracket and assigned a consecutive number (e.g., A1-1, A1-2).

L.1.1 Written Comments

For each written comment correspondence received on the Draft EIS/EIR (i.e., letter, email, or comment card), Table L-1 lists the designated comment set; the agency, organization, or individuals name; and the date received by Western and the Authority. Complete reproductions of the comment correspondence with brackets and comment numbers are provided in Section L.3 (Comments Received on the Draft EIS/EIR).

Table L-1. Draft EIS/EIR Written Comment Correspondence Information

Comment Set	Comment Date	Commenter
A – Public Agencies		
A1	7/21/15	Contra Costa Water District
A2	8/5/15	Central Valley Flood Protection Board
A3	8/7/15	Central Valley Regional Water Quality Control Board
A4	8/12/15	State of California Department of Water Resources
A5	8/17/15	Stanislaus County Department of Environmental Resources
A6	8/26/15	Stanislaus County Environmental Review Committee
A7	8/28/15	San Joaquin County
A8	8/31/15	U.S. Department of the Interior
A9	8/31/15	U.S. Environmental Protection Agency
A10	8/31/15	California Department of Water Resources
A11	8/31/15	California State Parks – Central Valley District
A12	8/31/15	Santa Clara Valley Water District
A13	8/31/15	Transmission Agency of Northern California
A14	8/31/15	Contra Costa Water District

Table L-1. Draft EIS/EIR Written Comment Correspondence Information

Comment Set	Comment Date	Commenter
A15	9/3/15	San Joaquin Valley Air Pollution Control District
A16	9/30/15	National Park Service
B – Organizations		
B1	2/23/15	HORUS Renewables Corp + San Luis Renewables LLC
B2	7/29/15	Planetary Ventures
B3	8/27/15	Wright Solar Park LLC
B4	8/31/15	San Joaquin Council of Governments
B5	9/3/15	Northern California Power Agency
C – Individuals		
C1	8/10/15	Laure Sheppard & Beth Tackaberry
C2	8/11/15	Beth Tackaberry
C3	8/11/15	Jackson Family
C4	1/15/15	Dolores Kuhn (1)
C5	1/15/15	Dolores Kuhn (2)
D – Public Hearings		
D1	8/11/15	Public Hearing – Los Banos

L.1.2 Verbal Comments

Public meetings on the Draft EIS/EIR were held in Tracy on August 10, 2015 and Los Banos on August 11, 2015 to help affected communities understand the Project, the Draft EIS/EIR, and how to participate in the agencies' decision-making processes, including commenting on the Draft EIS/EIR. At each of these public meetings, a court reporter was present to transcribe all verbal comments. A complete public meeting transcript of the Los Banos meeting, with brackets and comment numbers, is provided in Section L.3 (Comments Received on the Draft EIS/EIR). No verbal comments were provided at the Tracy meeting; therefore, the meeting transcript is not provided but can be obtained by request from Western.

L.2 Responses to Comments Received on the Draft EIS/EIR

Western and the Authority, in accordance with NEPA and CEQA guidelines, have reviewed each of the comment received on the Draft EIS/EIR and have prepared responses. NEPA requires all substantive comments, whether environmental or procedural in nature, to be addressed and attached to the Final EIS (40 CFR 1503.4(b)). The focus of the responses to comments received on the Draft EIS/EIR is the disposition of significant environmental issues that are raised in the comments, as specified by CEQA Guidelines Section 15088(c). Detailed responses are not provided to comments on the merits of the Proposed Project. When responding to comments, lead agencies need only respond to significant environmental issues and do not need to provide all information requested by reviewers, as long as a good faith effort at full disclosure is made in the Draft EIS/EIR (CEQA Guidelines Sections 15088(c) and (d), 15204(a)). As warranted, the Draft EIS/EIR was revised in response to comments received. Where the Draft EIS/EIR has been revised, the text has been marked in ~~striketrough~~ for deletions and underline for additions. The Draft EIS/EIR, as revised in this document, comments received during the public comment period, and written responses collectively comprises the Final EIS/EIR.

Responses to Comment Set A1 – Contra Costa Water District

- A1-1 The commenter provided a description of the Corral Hollow conservation easement and presented its understanding of the conservation easement's location relative to the Proposed Project. Western appreciates the information and confirms that the Proposed Project would cross the conservation easement.
- A1-2 At the request of the commenter, Western met with the Contra Costa Water District on July 28, 2015 to discuss the Proposed Project and potential impacts within CCWD's property.

Responses to Comment Set A2 – Central Valley Flood Protection Board

- A2-1 The commenter's statement about the Board's jurisdiction, and its authority to enforce the California Code of Regulations (CCR) regarding plans of flood control, is acknowledged. Floodplain areas affected by the Project are identified in Section 3.16 of the EIS/EIR, and potential impacts associated with floodplains are discussed in Section 4.16 of the EIS/EIR. Western will enforce and follow applicable federal laws and regulations regarding flood control, including the requirements for floodplain and wetland environmental review as specified in the Code of Federal Regulations Chapter X, Part 1022, which, among other things, requires the further examination of water quality effects of the Project, including during flood events. Western will work with the Central Valley Flood Protection Board to ensure the requirements of applicable state law and Board-issued permits are met.
- A2-2 The commenter's statement on the activities that require a Board permit is acknowledged. Please see response to comment A2-1.
- A2-3 The commenter's directions for access to the Board's forms and applicable regulations is acknowledged and appreciated.
- A2-4 The comment regarding mitigation measures to avoid decreasing floodway channel capacity is acknowledged. The Project's potential impacts related to flooding are discussed in Section 4.16 (Impacts WR-5 and WR-6) of the EIS/EIR. The Project would not be constructed in or have any direct impacts to floodways.
- A2-5 The commenter's statement about the potential for hydraulic impacts from encroachment within a floodplain is acknowledged. The project's potential impacts related to floodplains are discussed in Section 4.16 (Impacts WR-5 and WR-6) of the EIS/EIR. Structures would be placed outside of stream channels and floodplains where possible, and transmission towers would be located and engineered so as not to block or substantially alter the natural drainage pattern and would be able to withstand a 100-year flood. All construction within a designated 100 year floodplain will be undertaken in consultation with the USACE. No floodwater will be blocked by the Proposed Project, nor would floodwater be diverted outside of an existing floodplain.

Responses to Comment Set A3 – Central Valley Regional Water Quality Control Board

- A3-1 The commenter's statement regarding implementation of a Storm Water Pollution Prevention Plan (SWPPP) is acknowledged. As noted in Section 4.16.2 of the EIS/EIR, runoff from construction and maintenance of the SLTP will be controlled and meet RWQCB stormwater requirements and the conditions of a construction stormwater discharge permit. A stormwater pollution prevention plan will be prepared and implemented.

- A3-2 The commenter's statement on the requirements of Phase I and Phase II MS4 permits is acknowledged. The Proposed Project will have no effect on any municipal stormwater system, as it would not pass over any street or other feature that has stormwater drains. Additionally, the EIS/EIR concluded that, with implementation of the Environmental Protection Measures (BMPs) listed in Section 4.16.2, impacts to water-quality related to changes in stormwater flows caused by construction or operation of the Project would be negligible.
- A3-3 The commenter's statement on the discharges from industrial sites in the region is acknowledged. As noted in the EIS/EIR (Section 4.16.3), all required dewatering and discharge permits will be obtained prior to commencement of construction activities in order to ensure protection of water quality within the Project area.
- A3-4 The commenter's statement about the requirements of Section 404 of the Clean Water Act is acknowledged. Refer to response to comment A9-15 regarding compliance with Section 404 of the Clean Water Act and coordination with the RWQCB and CDFW.
- A3-5 The commenter's statement on the discharges from industrial sites in the region is acknowledged. As noted in the EIS/EIR (Section 4.16.3), all required permits will be obtained prior to commencement of construction activities in order to ensure protection of water quality within the Project area.
- A3-6 The commenter's statement on the requirement for a Waste Discharge Permit in the event that Western and the Authority determine that only non-jurisdictional waters of the state are affected by the Project is acknowledged. As noted in the EIS/EIR (Section 4.16.3), all required permits will be obtained prior to commencement of construction activities in order to ensure protection of water quality within the Project area.
- A3-7 The Proposed Project may cross portions of irrigated fields, such as those near the Tracy Substation or near Oak Flat Road, but Western would lease the lands under a long-term easement; therefore, ownership of those lands will not change and the present landowners will continue to be responsible for compliance with the requirements of the Irrigated Lands Regulatory Program.
- A3-8 The commenter's statement on the discharges from industrial sites in the region is acknowledged. As noted in the EIS/EIR (Section 4.16.3), all required dewatering and discharge permits will be obtained prior to commencement of construction activities, including coverage under an applicable NPDES permit, in order to ensure protection of water quality within the Project area.

Responses to Comment Set A4 – State of California Department of Water Resources

- A4-1 The commenter requested an extension of the Draft EIS/EIR comment period. Subsequently, DWR submitted its comments by the end of the comment period and withdrew its request for an extension.
- A4-2 Western, Reclamation, and the Authority acknowledge that DWR has a contract obligation for operations of the Joint Use Facilities including the San Luis and Dos Amigos substations. DWR's consultation and concurrence related to interconnection design, protection, operations, maintenance, communications, and NERC/WECC compliance responsibilities of SLTP facilities will be necessary and such discussions are underway.

- A4-3 Based on the need for its concurrence related to interconnection design, protection, operations, maintenance, and communications responsibilities of SLTP facilities, DWR is considered a Responsible Agency under CEQA and has been consulted as such throughout the environmental review process. Section 1.4.4 (California Department of Water Resources) has been added to the Final EIS/EIR to identify DWR as a Responsible Agency and describe its role in implementing the Proposed Project.
- A4-4 See response to comment A4-2.
- A4-5 DWR submitted its comments on the Draft EIS/EIR by the end of the public comment period and withdrew its request for an extension.

Responses to Comment Set A5 – Stanislaus County Department of Environmental Resources

- A5-1 The commenter described the Preferred Alternative as the corridor east of the existing lines. The commenter's description is correct, as shown in Final EIS/EIR Figure 2-8.
- A5-2 The commenter's preference for a corridor on the west side of the existing transmission lines is noted. In the Central Segment, which traverses Stanislaus County, the agency preferred corridor is on the east side of the existing transmission lines. The rationale for this preference is described in Section 2.4.4 of the Final EIR (Agency Preferred Alternative). Determining the Agency Preferred Alternative requires that Western balance many factors with the Project's purpose and need. It is the alternative which Western believes would fulfill its statutory mission and responsibilities, giving consideration to economic, environmental, technical and other factors. Although the agency preferred corridor would be closer to residences and have sight increases in the associated visual and temporary noise impacts, it would have less impact on biological resources in comparison to the corridor on the west side of the existing transmission lines. In particular, it would impact fewer special-status plant species. Additionally, it would require fewer crossings of the existing high voltage transmission lines, which would increase reliability by providing more space between circuits.

Responses to Comment Set A6 – Stanislaus County Environmental Review Committee

- A6-1 The commenter states that the County's recent progress in the redevelopment of the Crows Landing Naval Airfield is not reflected in the Draft EIS/EIR. Section 3.14.1.1 of the Draft EIS/EIR described the existing conditions at the airfield, and acknowledged that the County produced an Airport Land Use Compatibility Plan for the facility in June 2013. The Crow's Landing Airport and Industrial Business Park was also considered as a reasonably foreseeable future project in the list of projects for cumulative impact analysis (refer to Table 4.17-1 of the EIS/EIR). Section 3.14.1.1 has been updated in the Final EIS/EIR to include the recent information provided by the County.
- A6-2 The County's recent improvements at the Crows Landing airfield, and the production of a draft Airport Layout Plan are acknowledged. Refer to response to comment A6-1 regarding the updates to the description of the Crow's Landing Airport and Industrial Business Park in the EIS/EIR. The analysis of potential impacts to aircraft operations from the Proposed Project in Section 4.16 of the Draft EIS/EIR assumed that the Crows Landing airport will be re-opened for general aviation use. No other changes to the EIS/EIR are warranted.
- A6-3 The commenter requests exact locations and heights for Project structures so that the County can perform a detailed airspace analysis for the Crows Landing Airport. As noted in the list

of Environmental Protection Measures applicable to Traffic and Transportation (refer to EIS/EIR Section 4.14.2), Western would comply with applicable FAA rules regarding notification of a potential obstruction to aircraft, and marking of structures. Depending on the exact location and height of the transmission towers constructed, and the classification of the re-opened Crows Landing Airport (i.e., precision instrument, non-precision instrument or visual flight rules only), Western may need to notify the FAA of the potential obstruction. The FAA notification process also includes identifying and notifying all affected airports. The FAA would then conduct an Obstruction Evaluation/Airport Airspace Analysis (OE/AAA) to determine whether the towers would constitute an “obstruction” and/or a “hazard” to aircraft operating in the local airspace. Structures declared as obstructions are not necessarily hazards, and may require only marking with highly visible devices. For transmission towers located 3 miles or more from an airport runway, as is the case for the Crow’s Landing Airport, the likely requirements related to aircraft operations would be to install proper marking, and notify the FAA to ensure that the location and height of the structure is noted on aeronautical charts and other publications.

- A6-4 The commenter states that the future Crows Landing Airport must be considered in the impact analysis in the Traffic and Transportation section of the EIS/EIR. As noted above in response to comment A6-1, the future Crows Landing Airport and all other airports in the region, including the Tracy Airport and strips used by crop dusters, were included in the impact analysis.
- A6-5 The commenter requests that the Traffic and Transportation section of the EIS/EIR be amended to specify that Western will work with the County to prepare a detailed airspace analysis during subsequent Project design phases, after the location and height of support structures are known. The commenter states that “airspace impacts can occur up to 20,000 feet from the runway,” but provides no citation for this statement. Because the Proposed Project will be located adjacent to existing transmission towers, and because Western will comply with all FAA noticing and marking requirements, Western has concluded that construction and operation of the Proposed Project will not cause changes in air traffic patterns, including alterations of flight plans and operations (Impact TRAFFIC-6), such as those that may occur in the future at the Crows Landing Airport. The EIS/EIR concludes that potential impacts to air traffic patterns are less than significant (see also response to comment A6-6), and no further revisions to the EIS/EIR are warranted. Nevertheless, Western will coordinate with Stanislaus County to ensure impacts at the Crows Landing Airport are less than significant as described in the EIS/EIR.
- A6-6 The commenter requests inclusion of a mitigation measure in the EIS/EIR under Impact TRAFFIC-7 that requires Western to work with the County to prepare a detailed airspace analysis once the location and height of the SLTP transmission towers are known. Refer to response to comment A6-5 regarding impacts to air traffic patterns. The CEQA significance determination under Impact TRAFFIC-7 was changed from “no impact” to “less than significant” in the Final EIS/EIR to acknowledge the negligible potential for conflict with the Crows Landing Airport plans. No mitigation measures are warranted; however, Western will coordinate with Stanislaus County to ensure that conflicts with the Crows Landing Airport are less than significant as described in the EIS/EIR.
- A6-7 The commenter notes that several biological mitigation measures require compensatory mitigation, and warns against the creation of new wildlife (specifically avian) attractants within

10,000 feet of airports that support turbine operations and within 5 miles of approach departure surfaces to avoid wildlife hazards to aviation. Mitigation Measures BIO-17 and BIO-21 have been revised to specify that the location of any conservation easement or habitat restoration proposed for the burrowing owl and Swainson's hawk shall be located outside of an established Airport Influence Area.

- A6-8 The commenter cites a County Zoning Ordinance requiring utilities to submit transmission line routes to the County Planning Commission for review and recommendation prior to acquiring ROW for the line. The list of relevant regulations, plans and standards relevant to Land Use in Section 3.8.1.2 of the EIS/EIR was revised to include this requirement. Western is a Federal agency and therefore is not subject to the jurisdiction of a local agency. Although the County has no authority over the Proposed Project, Western will coordinate with the County to ensure its concerns are addressed, to the extent feasible.
- A6-9 The commenter notes that the Crows Landing Airport was considered in the Cumulative Impact Analysis in Section 4.17 of the EIS/EIR, and states that "this impact should be revised to indicate that potential impacts to airspace could occur and the mitigation measures that will be used to avoid and minimize such impacts." As noted above in response to comments A6-5 and A6-6, because Western will implement its Environmental Protection Measures, which include compliance with FAA regulations on noticing and marking potential obstructions, there is no evidence of any potential impacts to airspace. No revisions to the EIS/EIR are warranted. However, Western will coordinate with Stanislaus County to ensure impacts at the Crows Landing Airport are less than significant as described in the EIS/EIR.
- A6-10 The commenter presents the scoping comment letter submitted by Stanislaus County in January 2014 as an attachment to its Draft EIS/EIR comment letter. Western received the County's scoping letter; it is listed and summarized in Appendix B (Scoping Report) of the Final EIS/EIR. The EIR preparers considered all scoping comments and integrated them into the EIS/EIR, as appropriate.
- A6-11 The commenter presents the Notice of Preparation of a Draft EIR for the Proposed Crows Landing Industrial Business Park Project as an attachment to its Draft EIS/EIR comment letter. This attachment was reviewed for information on the subject project (refer to responses to comments A6-1 through 9).

Responses to Comment Set A7 – San Joaquin County

- A7-1 The commenter states that it has reviewed the Draft EIS/EIR and has no comments. The commenter will be included on the mailing list to receive any additional project documents.

Responses to Comment Set A8 – U.S. Department of the Interior

- A8-1 The commenter states that it has reviewed the Draft EIS/EIR and has no comments.

Responses to Comment Set A9 – U.S. Environmental Protection Agency

- A9-1 The commenter cites the Authority under which it reviewed the draft EIS/EIR and states that it provided scoping comments in January 2014. Western received the EPA's scoping letter; it is listed and summarized in Appendix B (Scoping Report) of the Final EIS/EIR. The EIR preparers considered all scoping comments and integrated them into the EIS/EIR, as appropriate.

- A9-2 The commenter correctly summarizes the need for the project and its objectives, as stated in the EIS/EIR. The commenter also states general concerns regarding air quality and aquatic resources and the need to comply with Section 404 of the Clean Water Act and EPA's General Conformity regulations. Refer to responses to comments A9-5 through 12 regarding air quality issues and regulations. Refer to responses to comments A9-13 through 18 regarding aquatic resource issues and regulations.
- A9-3 As required by federal statute, Reclamation operates and maintains the Central Valley Project (CVP) in California which is generally composed of water storage and conveyance facilities and hydroelectric generation. The CVP facilities typically generate 4,800,000,000 kilowatt-hours of clean, renewable, and carbon-free energy every year. This CVP-produced energy is provided to serve project pumping at cost-based rates. CVP energy production cost is typically in the \$21 to \$38/MWh range depending on annual hydrology. Total energy used for pumping CVP water is approximately 1,200,000 kilowatt-hours per year. Thus, no additional energy is needed to serve CVP project pumping needs. And as CVP generation substantially exceeds CVP pumping demands, alternate energy sources are not needed and their delivered cost would substantially exceed the cost of delivered CVP generation. Congress does not provide appropriations to purchase energy nor the authority to utilize other non-appropriated funds to purchase energy for use by Reclamation. However, Reclamation has been actively pursuing solar photovoltaic energy development on land comprising the San Luis Unit facilities to meet Department of Interior policy directives, which could benefit from the SLTP. Uses of this solar generation are being considered by Western and Reclamation and could include "behind the meter" options, energy exchange options, or banking arrangements, all designed to reduce energy and transmission costs for all parties. Additional clarification of the costs associated with the Proposed Project and alternatives has been included in the Final EIS/EIR in Appendix K (Cost Analysis).
- A9-4 EPA's rating of all alternatives in the Draft EIS/EIR as Environmental Concerns – Insufficient Information (EC-2) is noted. Responses to EPA's detailed comments (A9-5 through A9-33) provide additional information, as appropriate.
- A9-5 As noted by the commenter, the EIS/EIR includes a preliminary estimate of construction emissions. The summary in EIS/EIR Table 4.3-2 shows the General Conformity *de minimis* thresholds that apply in the SJVAPCD. The fraction of construction activity that would occur within the BAAQMD's jurisdiction would not be likely to exceed the less stringent *de minimis* thresholds within the BAAQMD. The Final EIS/EIR includes additional information and details in Appendix I to show the portions of emissions in the BAAQMD and in the SJVAPCD and to show the estimated construction emissions after implementing mitigation.

Federal agencies may include measures as part of the federal action to reduce emissions from the proposed action so that emissions fall below *de minimis* levels. In MM AQ-1, Western commits to requiring contractors to implement cost-effective controls that may result in emissions being below *de minimis* levels.

Western commits to coordinating with the SJVAPCD to identify appropriate emission reductions to be implemented to satisfy the General Conformity rule. Based on the current construction plans for the Agency Preferred Alternative, up to 60 tons of NOx emissions reductions may be necessary to satisfy General Conformity requirements, and this amount is set forth in MM AQ-1 of the Final EIS/EIR. The Final EIS/EIR clarifies that Western and the

SJVAPCD may execute a Voluntary Emission Reduction Agreement to achieve the necessary level of off-site NOx reductions contemporaneous with the final schedule of construction.

MM AQ-1 requires contractors to have an up-to-date fleet, that is properly operated in accordance with a construction activity management schedule, and that incorporates the best available technology and controls. The controls implemented by Western and contractors, together with off-site mitigation demonstrate that the Proposed Project will satisfy General Conformity requirements. For more detail, Appendix M of the Final EIS/EIR includes an Air Quality General Conformity Evaluation and Draft Conformity Determination.

A9-6 The Final EIS/EIR revises MM AQ-1 as recommended by EPA to clarify the requirements for contractors to have an up-to-date fleet, that is properly operated in accordance with a construction activity management schedule, and that incorporates the best available technology and controls.

A9-7 The commenter suggests additional commitments that may feasibly achieve reductions in fugitive dust emissions. The Proposed Project will be required to comply with stringent dust control requirements within SJVAPCD Regulation VIII. However, this comment from EPA and comments from SJVAPCD recommend additional mitigation that has been considered here. The Final EIS/EIR revises MM AQ-1 as recommended by EPA to identify the additional dust control actions to be implemented by contractors.

A9-8 The commenter suggests additional commitments that may feasibly achieve reductions in mobile source emissions. MM AQ-1 is revised in the Final EIS/EIR as recommended by EPA to identify the additional mobile source controls to be implemented by contractors. MM AQ-1 is also revised to clarify that the construction activity management strategy should include other cost-effective commitments, as identified in the comment for on-highway vehicles, non-road vehicles and equipment, and advanced technology demonstration and deployment.

The commenter suggests that the construction equipment, or non-road vehicles and equipment, should meet or exceed the EPA Tier 4 exhaust standards. As suggested by the comment, the mitigation requires contractors to use cost-effective fleets, a portion of which would meet or exceed Tier 4 standards. Western expects contractors to use a mix of “Tier 4 Interim” equipment because this standard generally applies to model year 2012 to 2014, and “Tier 4 Final” equipment that is model year 2014 and newer.

The Final EIS/EIR includes additional information in Appendix I to show the estimated emissions with mitigation based on a partial fleet of Tier 4 equipment. The equipment most likely to meet Tier 4 standards include loaders/backhoes, excavators, dozers, off-highway trucks, generator sets, and forklifts.

In sum, MM AQ-1 with revisions will require contractors to have an up-to-date fleet, that is properly operated in accordance with a construction activity management schedule, and that incorporates the best available technology and controls.

A9-9 The administrative controls suggested by the commenter would be implemented through the Environmental Protection Measures regarding air quality, as well as those for traffic and transportation, and through implementation of MM AQ-1 and MM TRAFFIC-1.

- A9-10 The EIS/EIR shows the current attainment designations in Table 3.3-2 for the San Joaquin Valley and Table 3.3-3 for the San Francisco Bay Area; no updates are necessary.
- A9-11 The Final EIS/EIR (Appendix I) includes clarifications to show additional detail on the preliminary estimate of construction emissions, and this includes an estimate of the additional controls required in MM AQ-1.
- A9-12 All Environmental Protection Measures and mitigation measures will be made enforceable through the federal Record of Decision, the Authority's decision documents, and the Mitigation Monitoring and Reporting Program (EIS/EIR Chapter 6).
- A9-13 The commenter describes the purpose of the federal Clean Water Act (CWA) and actions requiring a permit from the US Army Corps of Engineers (USACE). The commenter also describes the EPA's role in the permitting process. The commenter expresses concern about the potential adverse impacts to aquatic resources that could result from the Proposed Project, and summarizes the estimates of impacts presented in the Draft EIS/EIR. Western will avoid impacts to jurisdictional features to the extent feasible (e.g., by spanning creeks, waters, or wetlands and minimizing road crossings at such features). A formal jurisdictional delineation of the Project area is currently being prepared, and will be submitted to the USACE for verification upon completion.
- A9-14 The commenter notes that the corridor alternatives identified as "environmentally preferred" in the Draft EIS/EIR would have the most impact to jurisdictional resources, and that a complete planning-level assessment of aquatic resources would help further differentiate between alternatives and refine potential acreage impacts. The commenter also requests a jurisdictional delineation be conducted to aid in the design of the transmission line in order to demonstrate that the alignment is the Least Environmentally Damaging Practicable Alternative (LEDPA).
- As described under Impact BIO-2 of the EIS/EIR, because the exact locations of Project features are not yet known, disturbance estimates were developed by calculating the proportion of the total acres in each segment corridor that would be subject to temporary and permanent disturbance, and applying that proportion to the amount of each habitat type in the corridor. Because the Environmentally Preferred Alternative corridor contains more mapped ephemeral creeks, freshwater marshes, vernal pools, and jurisdictional resources than other alternative corridors, this method produced a larger amount of estimated impacts. However, during final engineering of the project Western will avoid impacts at jurisdictional features to the extent feasible (e.g., by spanning creeks, waters, or wetlands and minimizing road crossings at such features). In addition, Mitigation Measures BIO-29 and BIO-30 require a variety of minimization and avoidance measures to be implemented near vernal pool, seasonal wetlands, and other sensitive wetland habitats during construction and O&M. Mitigation Measure BIO-32 requires compensatory mitigation for impacts to wetlands and waters.
- As described in response to comment A9-13, a formal jurisdictional delineation is in preparation and will include the level of detail requested by the commenter. The jurisdictional delineation will be submitted to the Corps for verification upon completion.
- A9-15 The commenter requests that the Lead Agencies discuss, in the Final EIS/EIR, the process to be used to demonstrate compliance with the CWA Section 404 (b)(1) Guidelines. Section 3.4.1.1 has been updated in the Final EIS/EIR to state that a jurisdictional delineation is

being prepared to support permitting from the USACE, RWQCB, and CDFW in compliance with the CWA and other applicable regulations. In addition, implementation of Mitigation Measures BIO-29, BIO-30, and BIO-32 would effectively avoid, minimize, and compensate for impacts to wetlands and waters of the U.S. and state.

- A9-16 The commenter requests a planning-level assessment for potential impacts to waters of the US (WUS) in the Final EIS/EIR, and to modify the environmentally preferred alternative selected for each segment to ensure the selected alignments would represent the LEDPA. The requested planning level assessment of impacts to WUS was included in the Draft EIS/EIR; see Table 4.4-1, page 4-52, and Appendix C of the Draft EIS/EIR. Until final engineering is complete, acreages of impacts to WUS cannot be reliably estimated because many potential impacts can be avoided through micro-siting and design features. The jurisdictional delineation in preparation will quantify WUS in the Project area, including alternative segments.

The determination of the LEDPA considers the entire spectrum of environmental resources analyzed in the EIS/EIR, and is not limited to consideration of jurisdictional resources. Although the preferred corridors may contain more mapped jurisdictional resources than alternative corridors for several segments, the preferred corridors would result in a decreased impact to a variety of other environmental resources, both biological and other issue areas. Because most jurisdictional resources can be avoided, the presence of such features does not necessarily indicate that a larger acreage would actually be impacted by the preferred corridor vs. an alternative segment.

- A9-17 The commenter requests that the Final EIS/EIR contain additional measures to minimize impacts to aquatic resources, such as reducing the width of access roads, constructing bridges over WUS, and increasing buffer widths to minimize indirect effects to aquatic resources. Mitigation Measures BIO-29 and BIO-30 require a variety of minimization and avoidance measures to be implemented near vernal pool, seasonal wetlands, and other sensitive wetland habitats during construction and O&M. Mitigation Measure BIO-32 requires compensatory mitigation for impacts to wetlands and waters. Table 2-5 identifies Western's Environmental Protection Measures, which include additional measures to reduce and avoid impacts to aquatic resources including buffers from aquatic resources, minimum feasible area required for any in-stream work, and bridges at new stream crossings wherever feasible. No additional measures are required.

- A9-18 The commenter clarifies federal jurisdiction over wetlands, including hydrologically isolated wetlands, per the Clean Water Rule that went into effect on August 28, 2015. However, on October 9, 2015, the U.S. Court of Appeals for the Sixth Circuit stayed the Clean Water Rule nationwide pending further action of the court. The EPA and USACE have resumed use of prior regulations defining the term "Waters of the U.S.," which includes case-by-case consideration in determining specific resources protected by the Clean Water Act (CWA). Section 3.4.1.1 of the Final EIS/EIR has been revised to clarify federal regulation of wetlands, including whose that may be determined to be jurisdictional under the CWA.

- A9-19 Federal statutes related to the CVP require costs that have been allocated to specific project purposes, such as power and water supply, to be fully reimbursed from those power and water customers. Essentially, all San Luis Unit costs were assigned to the water supply purpose and are, therefore, to be reimbursed by Reclamation's water contractors. As described in Section 2.3 of the EIS/EIR, the No Action/No Project Alternative (i.e., relying on

CAISO tariff rates for use of the existing PG&E transmission line), raises the annual cost to be recovered from CVP water contractors to approximately as high as \$9,400,000 per year and based on previous data, that rate would increase over time as the CAISO tariff rates increase (refer to Appendix K). This \$9,400,000 annually is reimbursed by CVP water contractors. The same water contractors would be allocated the construction cost of the transmission line and related facilities. These construction costs would remain constant and certain for the 30-year financing term then drop to zero after the repayment period is over. Annual operations and maintenance cost would be reimbursed by water contractors over the entire life of the SLTP. Additional clarification of the costs and benefits associated with the alternative has been included in the Final EIS/EIR (refer to Appendix K).

- A9-20 The estimated range of annual payments from Reclamation water service contractors has been included in the Final EIS/EIR (refer to Section 1.2 and Appendix K).
- A9-21 The estimated range of costs that would be reimbursed by Reclamation water service contractors for use of the existing PG&E transmission line under CAISO tariffs has been included in the Final EIS/EIR (refer to Section 1.2 and Appendix K).
- A9-22 The estimated power requirement to operate the San Luis Unit has been included in the Final EIS/EIR (refer to Section 1.2 and Appendix K). The SLTP proponents do not have access to PG&E transmission line ratings, capacity availability, nor PG&E's anticipated future use of their transmission line capacity.
- A9-23 A comparison of estimated costs of using the PG&E transmission system and paying CAISO transmission access charges in accordance with their tariff versus constructing the SLTP has been added the Final EIS/EIR (refer to Appendix K). During the 5-year period between expiration of the existing contract and the proposed completion of the SLTP, CVP-produced generation will be conveyed from Tracy Substation (or perhaps Cottonwood Substation interconnection) to the San Luis facilities using PG&E transmission lines and incurring the cost of the CAISO tariff. The cost of the energy transmitted to the San Luis facilities is the CVP energy production cost which varies from \$21/MWh to \$38/MWh depending on the annual hydrology. CVP water contractors will repay all construction costs of the SLTP (refer to response to comment A9-19).
- A9-24 Refer to response to comment A9-3 regarding use of renewable energy generation and energy storage.
- A9-25 The commenter's summary of select California regulatory schemes regarding energy storage is acknowledged.
- A9-26 Refer to response to comment A9-3 regarding use of renewable energy generation and energy storage.
- A9-27 Local sources of power if available, in the quantity and duration needed, would be more expensive than the CVP energy that Congress has authorized to serve Reclamation pump load. New solar generation can cost in the range of \$60/MWh, whereas CVP use energy costs, on average, approximately \$30/MWh. The CAISO transmission delivery cost added to both the CVP energy cost and a renewable energy alternative cost does not change the large energy price difference. However, options are being explored to evaluate if locally generated renewable energy could be utilized "behind the meter" to provide needed energy for pumping federal water (i.e., avoiding the use of the CAISO transmission system). This would narrow,

- but not eliminate, the significant energy price differential. Thus, this would not eliminate the SLTP as described in purpose and need. However, the energy exchange being evaluated as described in response to comment A9-3 may be a feasible way to reduce costs until and if the SLTP is built and after construction is complete and could to help reimburse SLTP costs if the new SLTP line is used to deliver solar generation.
- A9-28 As described in Section 1.1 of the EIS/EIR (Project Overview), the SLTP would connect from Tracy Substation to San Luis Substation to Dos Amigos Substation as well as to O'Neill Substation to convey CVP generation to federal pumping loads at those substations.
- A9-29 Refer response to comment A9-3 regarding use of renewable energy generation.
- A9-30 The commenter notes that the EIS/EIR identifies the CEQ December 2014 revised draft guidance on consideration of GHG and climate change in NEPA. The comment suggests that consideration should be given to whether project impacts may be exacerbated by climate change. The Final EIS/EIR (Section 3.3.1.1) includes additional disclosure of climate change indicators that may exacerbate project impacts.
- A9-31 The comment requests additional discussion of climate change and foreseeable impacts relevant to the project based on the U.S. Global Change Research Program. The Final EIS/EIR (Section 3.3.1.1) includes additional information regarding the indicators of climate change and the vulnerabilities of the electricity transmission system, under the discussion of Impacts AQ-7 and AQ-8 (Section 4.3.3).
- A9-32 The commenter requests comparing the action alternatives with regard to vulnerability to the effects of climate change over the service life of the facilities. Refer to responses to comments A9-30 and A9-31 regarding the vulnerabilities of transmission systems. All action alternatives would be similarly vulnerable.
- A9-33 The commenter requests consideration of whether changes in the project design would be practicable to make the facilities more resilient to climate change. Transmission lines are designed to standards that take into account extremes in temperature and wind. These extremes include any likely effects of climate change during the life of the project. No changes to the Proposed Project are necessary.

Responses to Comment Set A10 – California Department of Water Resources

- A10-1 Refer to response to comment A4-3 regarding DWR's role as a Cooperating Agency under CEQA in the SLTP.
- A10-2 Western retains authority for strategic decision-making related to transmission of federal power to serve federal loads. As stated in response to comment A4-2, close coordination between Reclamation, Western, and DWR is required since many aspects of the SLTP involve Joint Use Facilities which DWR is contractually obligated to operate, maintain, and replace as needed. In addition, while DWR is the scheduling coordinator for transactions (currently including Federal load/generation scheduling) involving the use of the PG&E transmission system within the CAISO Balancing Authority (BA) and covered by the CAISO tariff, this arrangement can be replaced with federally owned transmission at the discretion of Western and Reclamation. Such a decision will be coordinated with DWR to ensure its input is addressed, but no approval authority over such long-term federal resource decisions has or could be delegated to DWR. It is Reclamation's intent to ensure there is no direct or

indirect additional costs or burdens imposed on DWR as a result of the SLTP. It is anticipated that the San Luis and Dos Amigos facilities will remain in the CAISO Balancing Authority (BA). It is anticipated that the SLTP interconnection would be a fourth intertie between the Western Sub-BA (within the Balancing Authority of Northern California (BANC)) and CAISO. Ongoing discussions between DWR, Reclamation, and Western will conclude with a coordination agreement that specifically addresses these issues. This coordination agreement is expected to be completed and executed prior to a final decision on the SLTP.

- A10-3 The role of DWR in the operation and maintenance of the San Luis Joint Use Facilities has been clarified in Section 1.2 (Purpose and Need) of the Final EIS/EIR.
- A10-4 Refer to response to comment A10-3 regarding the role of DWR in the operation and maintenance of the San Luis Joint Use Facilities.
- A10-5 The recent agreement executed in December 2014 by PG&E and DWR covers the transmission interconnection service for DWR at State Water Project facilities to include only the San Luis/Gianelli and Dos Amigos State loads. Transmission service from PG&E/CAISO for serving Federal generation/load at San Luis, O'Neill, and Dos Amigos will be required after the existing transmission service contract (No. 14-06-200-2207A (2207A)) between PG&E and the Federal government expires on March 31, 2016. There is no replacement interconnection agreement between Western and PG&E for serving the Federal pumping load at San Luis/Gianelli and Federal pumping load at O'Neill. In addition, the Large Generator Interconnection Agreement between Reclamation/Western and PG&E terminates on March 31, 2016. As of April 1, 2016, the Federal load at San Luis/Dos Amigo, the Federal generation at Gianelli, and the Federal generation/load at O'Neill will utilize the PG&E interconnection as explained in the No Action/No Project Alternative (Section 2.3 of the EIS/EIR) and will incur respective Transmission Access Charges. Western is currently in negotiations with PG&E for successor agreements to the expiring contract 2207A (which involves approximately 100 meters including O'Neill, San Luis, and Dos Amigos).
- A10-6 The existence of a Scheduling Coordinator Agreement between Western and DWR is acknowledged. If changes to this agreement are needed, they will be negotiated with DWR.
- A10-7 It is not anticipated that any changes to legacy agreements between DWR and Reclamation will be necessary.
- A10-8 Refer to response to comment A4-2 regarding DWR's operation and maintenance role.
- A10-9 Reclamation will conduct the appropriate coordination with DWR pursuant to existing agreements. Western will obtain encroachment permits as required.
- A10-10 The roles of Reclamation, Western, and DWR related to the Joint Use Facilities has been clarified in Section 1.2 (Purpose and Need) of the Final EIS/EIR.
- A10-11 Refer to response to comment A4-3 regarding DWR's role as a Responsible Agency.
- A10-12 It is the intent of Western and the Authority that the SLTP would have no adverse impact on the State operation, scheduling, or existing cost responsibilities of the Joint Use Facilities, and no reasonably foreseeable impacts have been identified. If an impact on State operations occurs, then Reclamation, Western, and the Authority would work with DWR to coordinate resolution.

- A10-13 Refer to response to comment A10-12 regarding costs related to Joint Use Facilities.
- A10-14 The process of scheduling energy across interconnected Balancing Agencies is commonplace in the electric utility industry. It is anticipated that the SLTP interconnection at 230-kV would be on the 230-kV bus at San Luis substation and would be treated as a fourth interchange between the Western Sub-BA (within the Balancing Authority of Northern California (BANC)) and CAISO. Interchanges are treated differently than a source/sink transaction. Very little change to the current scheduling of Federal and state load at Gianelli is needed and existing processes covered in existing agreements between DWR, Western, and Reclamation should remain the same. The SLTP proponents will work closely with DWR to provide the assurance that this is the case. Part of the SLTP includes a 230-kV interconnection into Dos Amigos Substation. This also would likely be treated as an interchange between CAISO and Western/BANC.
- A10-15 Refer to response to comment A10-12 regarding cost impacts to DWR.
- A10-16 Western, Reclamation, Authority, and DWR will be the design coordination team for determining all the aspects of the SLTP on or near the Joint Use Facilities, to include the substation/switchyard interconnection design/details, protection coordination, and communication needs.
- A10-17 Refer to response to comment A4-2 regarding NERC/WECC compliance.
- A10-18 Despite Western's best efforts, right of entry was not granted throughout the entire project area for surveys. As such, EIS/EIR preparers used best available information and methods to acquire setting information for these areas. The level of analysis contained in the Draft EIR/EIS is fully adequate to comply with both CEQA and NEPA. As a Responsible Agency for this project, DWR has engaged with Western and the Authority to ensure this Final EIS/EIR meets its informational needs.
- A10-19 Section 1.2 (Purpose and Need) in the Final EIS/EIR has been revised to clarify that certain SLU facilities pump up to 1.25 million acre-feet of federal water on an annual basis.
- A10-20 The range of estimated costs and benefits of the proposed SLTP has been included in Section 1.2 and Appendix K of the Final EIS/EIR.
- A10-21 Refer to response to comment A4-2 coordination with DWR.
- A10-22 The commenter states that any activity that occurs within the ROW of the State-only portion of the State Water Project would require obtaining an encroachment permit from DWR. Section 3.8.1.2 of the Final EIS/EIR was revised to include this requirement in the list of Regulations, Plans and Standards applicable to the Proposed Project. Western and Reclamation would conduct the appropriate coordination with DWR pursuant to existing agreements and would also conduct appropriate coordination with all applicable stakeholders pursuant to existing agreements.
- A10-23 Refer to response to comment A4-2 regarding DWR's operation and maintenance role.

Responses to Comment Set A11 – California State Parks - Central Valley District

- A11-1 The commenter describes certain sections of the SLRSRA Resource Management Plan/General Plan applicable to visual resources. This document was reviewed in preparation of the Draft

EIS/EIR, a summary of the applicable provisions has been added to the Final EIS/EIR in Section 3.15.1.2.

The commenter also disagreed with the conclusion in the Draft EIS/EIR that the Proposed Project would not result in significant and unavoidable impacts to visual resources. Although the impact conclusion did not change, Section 4.15 of the Final EIS/EIR was revised to further explain why impacts would be less than significant. Final selection of Project structure locations will involve consultation with affected land management agencies, including the California Department of Parks and Recreation, as required by Mitigation Measure REC-1 (Coordinate with local agencies to identify tower locations).

- A11-2 The commenter states that use of up to 50 acres of the existing Jasper Sears OHV Use Area for the proposed Los Banos West Substation would render use of the OHV Use Area impractical and requests that Western provide compensatory mitigation. If the OHV Use Area is needed for SLTP facilities, it is the intent of Western, the Authority, and Reclamation to work very closely with State Parks to develop equivalent replacement facilities. Implementation of Mitigation Measure REC-1 (Coordinate with local agencies to identify tower locations) and REC-2 (Modify existing facilities within and relocate, if necessary, the entrance to the Jasper Sears OHV Use Area) require close coordination with State Parks to site SLTP facilities to minimize impacts to recreationists and ensure continued access to the OHV Use Area.
- A11-3 The commenter expressed concern about lighting from the new Los Banos West Substation reaching campers at nearby campgrounds, and requested that lighting be designed to avoid this potential impact. If built, the new Los Banos West Substation would be located at least 0.6 mile from the nearest campground, which is the Meideros Campground on the south shore of O'Neill Forebay. The substation would not be visible from the Basalt Campground near San Luis Reservoir, and would be more than 3 miles away from the next closest campground, the group campground near North Beam, and 4 miles away from the San Luis Campground. The only permanent lighting at the substation would be a single 100-watt yellow, downward-aiming light at the access gate. All other lighting within the substation will only be used temporarily for maintenance of security purposes. While this single light bulb may be visible from the Meideros Campground, it will have low visibility compared to the lights from the buildings and streets of the nearby Villages at Laguna San Luis, and the vehicles on State Routes 33 and 152, and would not constitute an impact under Impact VIS-4.
- A11-4 The commenter states that Western should consult with State Parks to ensure emergency vehicles can access park areas during construction of the Proposed Project. Per Mitigation Measure TRAFFIC-1, Western will prepare and submit a traffic plan to all agencies with jurisdiction over all public roads that will be affected by Project construction activities, including to State Parks for affected public roads within the San Luis State Recreation Area. The plan will include an emergency access plan, prepared in consultation with local emergency service providers, which will specify how emergency vehicles will access construction zones and adjacent areas.
- A11-5 The commenter notes that "Other construction related impacts should be mitigated to prevent problems related [to] traffic and noise." Impacts to Traffic and Transportation are discussed in Section 4.14 of the EIS/EIR, and Noise impacts are discussed in Section 4.9 of the EIS/EIR.

A11-6 The commenter states that a reduction in access to the San Luis Reservoir State Recreation Area (SLRSRA) would cause direct impact to revenues for State Parks and requests that these impacts be mitigated. As described in Section 4.12 of the Draft EIS/EIR, it would be unlikely that access to the San Luis Reservoir State Recreation Area (SLRSRA) would be permanently lost or a decrease in accessibility would occur for an extended period of time as a result of the Proposed Project. In addition, Mitigation Measure REC-1 requires Western to coordinate final tower locations with CDPR to minimize conflicts (such as permanent access restrictions) to recreation areas. Therefore, a substantial loss of revenue for State Parks as a result of decreased accessibility is not expected.

However, construction and operation of the new Los Banos West Substation could result in a long-term decrease or a permanent loss of access to the Jasper Sears OHV Use Area within the SLRSRA and could therefore result in a loss of revenue for State Parks. Implementation of Mitigation Measure REC-2 would minimize impacts to accessibility and the associated potential loss of revenue to State Parks. A discussion of the potential for direct long-term impacts to revenues for State Parks as a result of decreased accessibility to the Jasper Sears OHV Use Area has been added under Impact SE-6 in Section 4.13 of the Final EIS/EIR.

A11-7 The commenter's concern regarding the proposed Project's long-term and cumulative impacts on recreational resources at the San Luis Reservoir State Recreation Area (SLRSA) is acknowledged. The commenter also expresses an intent to work cooperatively with Western and Reclamation to arriving at a mutually acceptable outcome. Impacts to recreational resources within the SLRSA are identified in Section 4.12 (Recreation) and 4.17 (Cumulative Affects Analysis). Refer to response to comment A11-6 regarding potential impacts to State Park revenue. Western and the Authority will continue to coordinate with State Parks throughout the planning and design processes.

Responses to Comment Set A12 – Santa Clara Valley Water District

A12-1 The commenter expresses support for efforts to secure durable, reliable, and affordable power transmission services for the SLU facilities of the CVP, and notes that it is reviewing the proposed funding and repayment mechanisms for the SLTP to ensure that project costs are equitably distributed in proportion with project benefits. The comment concerns the merits of the Proposed Project, not the EIS/EIR, and will be considered by Western and the Authority.

Responses to Comment Set A13 – Transmission Agency of Northern California

A13-1 The commenter identifies itself as the owner of property under consideration for the proposed Tracy East Substation. Western will coordinate with the Transmission Agency of Northern California on project-related activities affecting the subject property.

Responses to Comment Set A14 – Contra Costa Water District

A14-1 The commenter describes the Corral Hollow property that was purchased as mitigation for the Los Vaqueros Reservoir Expansion Project in 2012 and is in the process of being placed into a conservation easement. The proposed project alignment would cross this property. Western acknowledges coordination with the commenter, as described on the comment.

A14-2 The commenter requests that the property be subject to the minimum amount of disturbance necessary both during construction and O&M, and provides specific measures to minimize

disturbance. The suggested measures have been incorporated into Mitigation Measure BIO-33 under Impact BIO-6 (Conflict with the provisions of an adopted local, regional, state, or federal habitat conservation plan); this measure provides impact minimization measures for existing and pending conservation easements.

- A14-3 The commenter requests that the Corral Hollow property be added to Table 3.4-3 and subsequent discussions of conservation easements. The requested revisions have been made to the Final EIS/EIR. Sections 3.8 and 4.8 of the Final EIS/EIR were revised to expand upon the analysis of effects on lands covered by conservation easements, including the addition of a new mitigation measures BIO-33 (Minimization measures for conservation easements) and LU-1 (Minimize impacts on conservation easements and/ or amend conservation easements).
- A14-4 The commenter expresses appreciation for Western's commitment to avoid and minimize impacts to agriculture, including grazing. The commenter states the importance of minimizing impacts to grazing during operation and maintenance and requests that this be stated in the document. As stated in Section 4.2 (Agriculture), during operation, the presence of transmission lines is generally compatible with agricultural use (e.g., agriculture operations could continue within the easement and around the towers) and would not substantially impair the use of agriculture land. In addition, Mitigation Measure BIO-33 has been added to the Final EIS/EIR which requires measures to minimize impacts within existing conservation easements and coordination with easement holders to ensure Project activities adhere to the requirements of individual conservation easement deeds and approved management plans, as described in the EIS/EIR.

Responses to Comment Set A15 – San Joaquin Valley Air Pollution Control District

- A15-1 The controls implemented by Western and contractors, together with off-site mitigation in MM AQ-1, including revisions with this Final EIS/EIR, demonstrate that the Proposed Project will comply with General Conformity in the San Joaquin Valley air basin. The Final EIS/EIR clarifies that Western and the SJVAPCD may execute a Voluntary Emission Reduction Agreement to achieve the necessary level of off-site reductions contemporaneous with the final schedule of construction. Appendix M of the Final EIS/EIR includes an Air Quality General Conformity Evaluation and Draft Conformity Determination. Refer to response to comment A9-5 for more detail.
- A15-2 As noted by the commenter, the EIS/EIR includes a preliminary estimate of construction emissions. The summary in EIS/EIR Table 4.3-2, and detail in Appendix I, show the potential emissions prior to implementing the full range of feasible practices listed in MM AQ-1. The Final EIS/EIR includes additional information in Appendix I to show the estimated emissions with mitigation. The summary tables cover the results of modeling using the CalEEMod software, which is an SJVAPCD-Approved Model, according to the Guidance for Assessing and Mitigating Air Quality Impacts (GAMAQI, p. 56). Detailed CalEEMod output reports are also provided in Appendix I of the Final EIS/EIR.

MM AQ-1 includes a requirement that Western will finance and verify implementation of emission reductions so that no net increase occurs for NO_x and PM₁₀. The quantity of reductions is based on the preliminary estimate of emissions. The preliminary estimate does not reflect additional reductions that would be achieved by other portions of the mitigation, such as implementation of a construction activity management strategy.

Examples of factors that have not yet been taken into consideration include avoiding road dust emissions by shifting on-road activity to helicopter hauling; and shifting construction schedules to avoid overlapping that was assumed to occur in the preliminary estimates.

Section 4.3 of the Final EIS/EIR has been revised to clarify that Western proposes to establish an agreement with the SJVAPCD, such as a Voluntary Emission Reduction Agreement, to achieve the necessary level of off-site reductions contemporaneous with the final schedule of construction. The agreement would establish Western's commitment to provide payment to the SJVAPCD of a mitigation fee to be used for air quality benefit programs to reduce NOx for General Conformity and for CEQA purposes and, also, to reduce PM10 for CEQA purposes.

A15-3 The Proposed Project will be required to comply with stringent dust control requirements within SJVAPCD Regulation VIII. However, comments from EPA and this comment from SJVAPCD recommend additional mitigation that has been considered and is included with the Final EIS/EIR and revisions to MM AQ-1. Refer to response to EPA comment A9-7 for more detail.

A15-4 The discussion of Impact AQ-3 focuses on construction emissions because the Project would have no emissions during operation, and only minor emissions during maintenance activities (Draft EIS/EIR, p. 4-11). Construction would occur over the 95 miles of new transmission lines, and as noted in the EIS/EIR, installing structures within the right-of-way would involve 1 to 2 weeks of activity at each location. At each of the two new 500-kV substations, where longer durations of construction activity would occur, emission calculations and details added in Appendix I of the Final EIS/EIR show that no criteria pollutant would be emitted at a level exceeding the 100 lb/day threshold noted by the comment. As a result Ambient Air Quality Analysis (AAQA) would not be applicable.

A15-5 The EIS/EIR discussion of Impact AQ-4 illustrates the primary health risks to nearby sensitive receptors would be driven by diesel particulate matter (DPM) emissions during construction. The level of DPM emissions distributed over the 95 miles of new transmission lines during the full duration of construction would be about 2.6 tons, or less than 1.3 tons during each of the two years. As noted in the EIS/EIR, installing structures within the easements would involve 1 to 2 weeks of activity at each location. This means that exposure durations would be limited 1 to 2 weeks along the transmission line corridor, and thus unlikely to pose a notable health risk.

Sources of DPM would be in use over longer durations for construction at the proposed substation sites. At each of the two new 500-kV substations, where longer durations of activity and emissions would occur, emission calculations in Appendix I show that DPM emissions due to construction of the substations would occur at a combined rate of about 0.7 tons per year to construct both substations, or less than 4 lb/day at each of the two substation sites. These substations would cover up to 50 acres each, and sensitive receptors are separated from the substation sites by approximately 600 feet or more (Draft EIS/EIR, p. 4-80). The potential cancer risk over a 70-year lifetime for sensitive receptors at this distance was estimated through air dispersion modeling with the following parameters:

- DPM emission rate for construction at each new 500-kV substation: 0.35 tons per year, spanning two years.

- Area or volume source configuration for mobile sources within each substation: 50 acres (202,400 m²).
- Emission rate per area source: 0.35 tons per year per 50 acres (0.5 x 10⁻⁷ grams/sec per m²).
- Release height, typically: 6 feet (1.8 m).
- Receptor flagpole height, typically: 6 feet (1.8 m).
- Modeled results provide maximum annual average DPM concentration of 0.8 µg/m³ near the substation fence-line and less than 0.5 µg/m³ for any receptor separated from the fence-line by 600 feet or more.
- Inhalation of DPM at less than 0.5 µg/m³ during two years over a 70-year lifetime (2/70), to arrive at a lifetime exposure of: 0.014 µg/m³ average.
- Applying the Unit Risk Factor for DPM inhalation of 300 x 10⁻⁶ excess cancer cases per µg/m³ (Source: OEHHA) results in a potential cancer risk of no more than 4.2 x 10⁻⁶ excess cancer cases for the proposed substations.

The resulting annual average DPM concentrations at the nearest sensitive receptors would not be above the level of significant cancer risk, as identified in Impact AQ-4. The potential cancer risk associated with diesel exhaust particulate matter for the receptors experiencing maximum exposure would be well within the SJVAPCD's threshold of significance of 10 x 10⁻⁶ excess cancer cases. As a result, the proposed level of DPM emissions from within the substation sites and along the transmission line corridor would not require a detailed Health Risk Assessment (HRA).

A15-6 The Environmental Protection Measures in EIS/EIR Section 4.3.2 show that all project participants will comply with applicable federal, state, and local rules and regulations regarding air quality. Additionally, the Final EIS/EIR revises MM AQ-1 as recommended by EPA to clarify that contractors should adhere to California's anti-idling requirements. Refer also to response to comment A9-8.

A15-7 The comment states that SJVAPCD Rule 9510 Indirect Source Review (ISR) would apply to the Proposed Project. A letter dated November 3, 2015 from the SJVAPCD (ISR Determination Project No.: C20150276) indicates that Rule 9510 requirements apply to the proposed SLTP. Revisions included with the Final EIS/EIR in Section 4.3 and the following information in this response illustrate that the Proposed Project emissions would be fully mitigated and no further Rule 9510 ISR requirements would apply.

The SJVAPCD Staff Report that presented Rule 9510 to the air district Governing Board, dated December 15, 2005, states the scope of the ISR program most clearly with the following: "Indirect sources are land uses that attract or generate motor vehicle trips." The proposed SLTP would not attract or generate motor vehicle trips, except for during construction and maintenance.

Rule 9510 applies to new development projects that are the subjects of land development decisions by cities and counties within the San Joaquin Valley, if the land use would equal or exceed specific size limits or "applicability thresholds" that are tailored for the square-footage of residential, commercial, industrial, and office spaces. The SJVAPCD Frequently Asked Questions (FAQ, 10/29/2012) clarifies that Rule 9510 aims to manage the indirect

emissions attributed to land development and population growth in the San Joaquin Valley, and the SJVAPCD Guidance for Assessing and Mitigating Air Quality Impacts (GAMAQI, p. 7) defines Development Project as: “Refers generally to a land use development project such as a residential project, a commercial project, an industrial project, or a transportation project.” While the proposed SLTP and associated facilities would add new electric transmission facilities to the San Joaquin Valley, the proposed transmission facilities would not be a development project that generates any substantial level of population growth or indirect source emissions.

As stated in EIS/EIR Section 1.3 (Project Objectives), one objective of the Project is to obtain “. . . efficient transmission delivery of CVP power from federal power generation sites to the major pumping stations of the SLU to reliably deliver water to Reclamation and the Authority’s member agencies (federal water service contractors).” The interconnected power facilities, and associated water delivery network, extends well beyond the boundaries of the San Joaquin Valley. The benefits of the Project would accrue to customers throughout California and the western U.S. As a result, a major function of the Proposed Project is to interconnect “Energy Production Plants”, which are exempt from the ISR (Rule 9510, Section 4.4.3.7).

Construction-phase emissions would not be caused by indirect sources because they would be directly attributable to the activity of building the Proposed Project, as detailed in EIS/EIR Section 4.3. As stated above, aside from construction and maintenance, the proposed SLTP would not attract or generate motor vehicle trips. Because the Project would have no emissions during operation, and only minor emissions during maintenance activities (Draft EIS/EIR, p. 4-11), the construction emissions are the primary topic of the EIS/EIR analysis including the controls in MM AQ-1. The Final EIS/EIR includes revisions to MM AQ-1 to clarify how enforceable emission reductions would be achieved. With this mitigation, the project would be exempt from Rule 9510 ISR requirements (Rule 9510, Section 4.3) because sufficient emission reductions would occur to achieve no net increase of NOx and PM10. The emission reduction agreement, which will include monitoring and reporting, that is required under MM AQ-1 will ensure that construction-phase emissions are fully mitigated. No additional mitigation is necessary.

Responses to Comment Set A16 – National Park Service

- A16-1 The commenter’s summary of the Proposed Project is accurate.
- A16-2 The commenter notes that the Butterfield Overland National Historic Trail is within the southernmost segment of the Area of Potential Effect for the proposed undertaking and requests that a discussion of this resource be added to Section 3.5.1.1 (Affected Environment, Resources Present). The requested revisions have been made to the Final EIS/EIR.
- A16-3 The commenter suggests that the discussion of El Camino Real in Section 3.5 might be clarified if the text mentioned that this road is not the same as the El Camino Real de los Tejas National Historic Trail or El Camino Real de Tierra Adentro National Historic Trail. As the Proposed Project is located entirely within California and these National Historic Trails are located in Texas and New Mexico respectively, confusion is unlikely. No revisions have been made to the EIS/EIR.

Responses to Comment Set B1 – HORUS Renewables Corp and San Luis Renewables LLC

- B1-1 The commenter's support of the SLTP is acknowledged and appreciated. Western will work closely with Reclamation and the commenter to minimize impacts to the commenter's renewable projects to the extent feasible.
- B1-2 The alternatives described by the commenter are consistent with those presented in the EIS/EIR.
- B1-3 The Proposed Project corridors around the eastern side of the O'Neill Forebay are components of the Agency Preferred Alternative as presented in the Final EIS/EIR. Western would co-locate the SLTP with the existing PG&E lines to the extent practicable to minimize impacts to solar facilities.
- B1-4 The alternative corridors around the western side of the O'Neill Forebay are not components of the Agency Preferred Alternative as presented in the Final EIS/EIR. Western would appreciate the opportunity to coordinate project siting in this area with the commenter during the detailed design phase of the Project.

Responses to Comment Set B2 – Planetary Ventures

- B2-1 The commenter states that it has reviewed the Draft EIS/EIR and has no comments.
- B2-2 The commenter's address has been updated on the mailing list as requested.

Responses to Comment Set B3 – Wright Solar Park LLC

- B3-1 The commenter provides a description and status of the Wright Solar Park. The Notice of Preparation (NOP) and Notice of Intent to prepare an EIS/EIR for the proposed SLTP were filed in November 2013. At this time, the NOP for the Wright Solar Park had been distributed (dated October 2013). It is noted that the South Segment of the Proposed Project and the San Luis to Dos Amigos Alternative would cross the Wright Solar Park property.
- B3-2 As stated by the commenter, the Proposed Project and San Luis to Dos Amigos Alternative corridor would require acquisition of portions of the Wright Solar Park property. Western would enter into cost negotiations with affected landowners and pay fair market value for any easements. As shown in Final EIS/EIR Figure 2-8, the Billy Wright Road Alternative is the Agency Preferred Alternative in the South Segment, which would not affect the Wright Solar Park.
- B3-3 One of the objectives of the SLTP, as stated in Section 1.3 (Project Objectives) of the EIS/EIR, is to obtain durable, long-term, cost certain transmission to deliver CVP generation to Reclamation's pump loads at Gianelli, O'Neill, and Dos Amigos. Implementation of the No Action/No Project Alternative would increase pumping costs to Federal water contractors by approximately \$5.3 to \$8.7 million per year as a result of the existing Transmission Access Charges (TAC) in the current CAISO tariff. TACs have changed 75 times since first implemented by CAISO in 2001. The High Voltage TAC has increased from about \$1.29 in 2001 to about \$9.80 as of August 2015 or an increase of 759% over the approximately 16-year period. Because the TAC price variability to-date has proven to be neither durable nor cost certain over time, the No Action Alternative fails to satisfy the basic project objectives. Refer to Appendix K (Cost Analysis) of the EIS/EIR for additional details. The Agency Preferred

- Alternative as described in Section 2.4.6 of the Final EIS/EIR would achieve most project objectives.
- B3-4 The EIS/EIR has been revised in Section 1.2 (Purpose and Need) and Appendix K (Cost Analysis) to include further explanations of the project cost, assumptions, and financial analysis related to the Project alternatives.
- B3-5 The commenter asserts that because Wright Solar Park did not grant right of entry for the Proposed Project or its alternatives to be studied in detail, the level of analysis provided in the Draft EIS/EIR is inadequate to fully describe the Proposed Project's impacts. Because right of entry to Wright Solar Park properties was not granted, EIS/EIR preparers used best available methods to acquire setting information for these areas. As described in Section 3.4.1.1, these methods included surveying from the property edge using binoculars to identify habitat types and landforms present (where possible), review of aerial photography and topographic maps, review of biological studies in the region, and local expertise and familiarity with the habitats and species that occur regionally. Therefore, a comprehensive, multipronged approach was used to develop the project's baseline biological setting from which to analyze impacts from Project implementation. The level of analysis presented in the Draft EIS/EIR is fully adequate to comply with both CEQA and NEPA. Please see Appendix C of the Draft EIS/EIR for a detailed description of biological data collection methods.
- B3-6 The commenter claims that installing the proposed transmission line could cause removal of or a reduction in output from a portion of the solar project. Although the commenter suggests that this could result in a reduction of electricity made available to California customers from renewable resources, all load serving entities in California are subject to the Renewable Portfolio Standard. The project would not cause any change the availability of electricity from renewable energy sources. Any incremental changes in electricity output from one particular facility must be equally replaced by the same amount of electricity production from a different renewable energy facility to meet the overall statewide goal.
- B3-7 The commenter expresses concern regarding the potential displacement of the Wright Solar Park Project from the SLTP. As stated in Section 4.13 of the EIS/EIR, typically project components (e.g., towers) can be sited to avoid complete displacement of existing homes and businesses and existing land uses within easements are able to continue. However, in the event that displacement does occur, MM SE-1 (Acquire Land Rights) would minimize this impact to a less than significant level. In addition, The Billy Wright Road Alternative presented in the EIS/EIR provides an alternative route that would avoid conflict with the Wright Solar Park project area. As described in the Final EIS/EIR (Section 2.4.6, Agency Preferred Alternative), Western included the Billy Wright Road Alternative segment as part of the Agency Preferred Alternative, in part to avoid conflicts with the Wright Solar Park.
- B3-8 Refer to response to comment B3-2.

Responses to Comment Set B4 – San Joaquin Council of Governments

- B4-1 The commenter provides general background regarding the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP) administered by the San Joaquin Council of Governments (SJCOG). The commenter also states that the SLTP would have impacts to existing conservation easements held by SJCOG. The Final EIS/EIR presents an expanded

analysis of impacts within conservation easements under Impact BIO-6 (Conflict with the provisions of an adopted local, regional, state, or federal habitat conservation plan).

- B4-2 The commenter notes that Mitigation Measure BIO-2 states that “Western will comply with conditions of any affected existing conservation easement, and will avoid and minimize impacts within conservation easements to the extent feasible.” The commenter states that the conservation easements held by SJCOG prohibit ground disturbance of any kind within the easement area, and that if a project disturbs a conservation easement held by SJCOG, it would result in a violation of the terms of the easement and would result in a significant and unavoidable impact. Impacts within existing and pending conservation easements are analyzed under Impact BIO-6 (Conflict with the provisions of an adopted local, regional, state, or federal habitat conservation plan). Additional text has been added to that analysis for the Final EIS/EIR, and Mitigation Measure BIO-33 has been added. This measure provides minimization measures to address potential conflicts with existing and pending conservation easements. Where a conservation easement prohibits new ground disturbance, Mitigation Measure BIO-33 requires Western to span covered areas to the extent feasible, routing around easement boundaries, or other methods developed through consultation with the easement holder. Therefore, with implementation of MM BIO-33, impacts to conservation easements would be reduced to less than significant.
- B4-3 The commenter notes that Mitigation Measure BIO-28 states in part, “Impacts within conservation easements may require compensatory mitigation at higher ratios than impacts outside of easements, and mitigation will be consistent with the requirements of the easement.” The commenter states that the conservation easements held by SJCOG prohibit ground disturbance of any kind within the easement area, and that if a project disturbs a conservation easement held by SJCOG, it would result in a violation of the terms of the easement and would result in a significant and unavoidable impact. Refer to response to comment B4-2 regarding the addition of Mitigation Measure BIO-33 to reduce impacts within conservation easements to less than significant.
- B4-4 The commenter notes that Mitigation Measure BIO-31 states in part, “Impacts within conservation easements may require compensatory mitigation at higher ratios than impacts outside of easements, and mitigation will be consistent with the requirements of the easement.” The commenter states that the conservation easements held by SJCOG prohibit ground disturbance of any kind within the easement area, and that if a project disturbs a conservation easement held by SJCOG, it would result in a violation of the terms of the easement and would result in a significant and unavoidable impact. Refer to response to comment B4-2 regarding the addition of Mitigation Measure BIO-33 to reduce impacts within conservation easements to less than significant.
- B4-5 The commenter summarizes the analysis presented in the Draft EIS/EIR under Impact BIO-6 (Conflict with the provisions of an adopted local, regional, state, or federal habitat conservation plan) and notes that SJCOG’s Tracy 580 Business Park Preserve is identified, but SJCOG’s Cubiburu Preserve and USFWS South Preserve are not. Table 3.4-3 and the discussion under impact BIO-6 have been updated in the Final EIS/EIR to include the Cubiburu Preserve and the USFWS South Preserve.

The commenter summarizes the conclusion under Impact BIO-6, which is that the Proposed Project would not conflict with the provisions of any existing conservation easements, and states that the conservation easements held by SJCOG prohibit ground disturbance of any

kind within the easement area, and that if a project disturbs a conservation easement held by SJCOG, it would result in a violation of the terms of the easement and would result in a significant and unavoidable impact. Refer to response to comment B4-2 regarding revisions to the analysis under Impact BIO-6, including the addition of Mitigation Measure BIO-33 to reduce impacts within conservation easements to less than significant.

- B4-6 The commenter quotes from Section 4.17.4 of the Draft EIS/EIR, which states that the Proposed Project's incremental contribution to adverse cumulative impacts to conservation easements would not be considerable. The commenter states that the conservation easements held by SJCOG prohibit ground disturbance of any kind within the easement area, and that if a project disturbs a conservation easement held by SJCOG, it would result in a violation of the terms of the easement and would result in a significant and unavoidable impact. Refer to response to comment B4-2 regarding the addition of Mitigation Measure BIO-33 to reduce impacts within conservation easements to less than significant. In addition, Section 4.17.4 of the Final EIS/EIR has been revised to refer to the additional mitigation requirements of MM BIO-33.
- B4-7 The commenter states that, as the agency charged with administering the SJMSCP and the conservation easements held pursuant to that plan, the SJCOG should be consulted prior to Project approval to avoid impacts to existing conservation easements. As stated under Impact BIO-6 of the EIS/EIR, Western would coordinate with the San Joaquin Council of Governments [SJCOG] for impacts to special-status species covered under the SJMSCP. Mitigation Measure BIO-33 also requires Western to coordinate with the SJCOG regarding conservation easements in the vicinity of the Proposed Project.

Responses to Comment Set B5 – Northern California Power Agency

- B5-1 Western, Reclamation, and the Authority concur with the comment that a portion of CVP generation, commonly referred to as Project Use Energy, is provided to pump water at Gianelli and O'Neill pumping plants; however, as currently authorized, the commercial power purpose is not allocated any of the San Luis Unit cost for reimbursement. Essentially all costs associated with the San Luis Unit, including those related to construction of SLTP, are assigned to the water supply purpose for reimbursement.

Responses to Comment Set C1 – Laure Sheppard & Beth Tackaberry

- C1-1 The commenter asks how the transmission lines will co-exist with farming and animals and how often the lines will be maintained. As stated in Section 4.2 (Agriculture), the presence of transmission lines is generally compatible with agricultural use (e.g., agriculture operations could continue within the easement and around the towers) and would not substantially impair the use of agriculture land. The frequency of operation and maintenance is presented in Appendix D of this Final EIS/EIR (see Section D.4.2 (Projected O&M Frequency)).
- C1-2 The commenter asks whether power from the proposed transmission lines could be "pulled for personal use." Interconnection with the proposed transmission lines would require a formal request through Western's Open Access Transmission Service Tariff and construction of adequate infrastructure to distribute the voltage, which is much too high for personal (i.e., residential) use.
- C1-3 The commenter's concern about the relationship between electric transmission lines and cancer is acknowledged. The present state of knowledge of the health effects of EMF

exposure is discussed in Section 3.11.1.1 of the EIS/EIR, and the potential risks to human health caused by exposure to electromagnetic fields of the Proposed Project are included in the discussion of Impact H&S-4 in Section 4.11.3 of the EIS/EIR. The existing transmission lines have no documented adverse public health and safety effects from EMF exposure. Circuits placed parallel to each other tend to cancel electric and magnetic fields, thus reducing the measured fields under the lines and at the edge of the easement. The electric and magnetic fields at the edge of the easement are anticipated to be well below the recommended guidelines of the International Commission on Non-Ionizing Radiation and the American Conference of Governmental Industrial Hygienist.

- C1-4 The commenter requested that the proposed transmission line be located between existing transmission corridors. The space between the existing transmission structures on the commenter's property is just over 100 feet. This potential alternative is not technically feasible because there is not sufficient room for a 125- to 250-foot-wide easement for the proposed transmission line.

Responses to Comment Set C2 – Beth Tackaberry

- C2-1 As stated in Table 2-2 of the Final EIS/EIR, construction of the SLTP is expected to start in Summer 2018 and be operational by 2021.
- C2-2 Refer to response to comment C1-4 regarding the feasibility of locating the proposed transmission line between existing transmission corridors.

Responses to Comment Set C3 – Jackson Family

- C3-1 The commenter's opposition to having the project on her property and her ranking of the alternatives will be considered by Western and the Authority.

Responses to Comment Set C4 – Dolores Kuhn 1

- C4-1 The commenter notes the potential for cumulative impacts to agriculture resources. Cumulative impacts to agriculture resources are analyzed in Section 4.17.3 (Cumulative Effects Analysis) of the EIS/EIR. Cumulative impacts could result from the permanent conversion of Important Farmlands or the preclusion of agricultural activities. However, as the presence of transmission lines is generally compatible with agriculture use and agriculture operations could continue within the proposed SLTP easements, impacts would be minimal.
- C4-2 The commenter, whose residence and ranch is on Mountain House Road near the Tracy Substation, asked whether the multiple transmission lines located on three sides of the residence would cumulatively increase exposure to EMF. The present state of knowledge of the health effects of EMF exposure is discussed in Section 3.11.1.1 of the EIS/EIR, and the potential risks to human health caused by exposure to electromagnetic fields of the Proposed Project are included in the discussion of Impact H&S-4 in Section 4.11.3 of the EIS/EIR. Until engineering of the Proposed Project is completed, the exact location of the Proposed Project in relation to the commenter's property will not be known, and therefore EMF exposure on the commenter's property cannot presently be calculated. However, the Proposed Project would likely include construction of the new Tracy East Substation, located to the northeast of the intersection of Mountain House Road and Kelso Road, and the new transmission line would likely exit the new substation heading south or southeast, and therefore be located farther away from the commenter's property than the existing

- transmission and distribution lines located on three sides of the commenter's residence. Though the exact change in exposure at the commenter's residence is unknown, circuits placed parallel to each other tend to cancel electric and magnetic fields, thus reducing the measured fields under the lines and at the edge of the easement. The electric and magnetic fields at the edge of the easement of the new transmission line are anticipated to be well below the recommended guidelines of the International Commission on Non-Ionizing Radiation and the American Conference of Governmental Industrial Hygienist. Therefore, it is highly unlikely that EMF exposure at the commenter's residence will increase substantially following construction of the Proposed Project.
- C4-3 The commenter states that development of the Proposed Project will degrade the quality of the environment and infers that there will be cumulative effects due to the perceived abundance of existing electrical infrastructure. The analysis of impacts to visual resources from the Proposed Project is presented in Section 4.15 of EIS/EIR; cumulative impacts to visual resources are presented in Section 4.17.15 of the EIS/EIR. Western concluded that although construction of the Proposed Project will contribute to cumulative effects of development in the area, the incremental change in visual contrast and quality will be small and will not meet the threshold for determining that the Project will result in significant direct, indirect, or cumulative impacts to visual resources.
- C4-4 The commenter's statement about the EMF guidelines established by the California Department of Education is acknowledged, as is their expressed fear for themselves and their livestock. Refer to response to comment C4-1 regarding EMF. Similar to exposure for humans, there is no conclusive evidence that transmission line EMF exposure for grazing livestock presents an increased health risk, even for animals that routinely graze within the transmission line easement.
- The commenter also requests information on the effects of earthquakes on transmission lines. Potential impacts from the Proposed Project caused by earthquakes and other geologic phenomena are discussed in Section 4.7.3 of the EIS/EIR. Geological hazards will be confirmed during final design of each structure location as part of the geotechnical investigation required under Mitigation Measure GEO-1. Project design recommendations will include measures to stabilize and protect Project structures from geologic hazards. Geologically unstable sites will be avoided or stabilized prior to construction. Additionally, expansive soils will be avoided or stabilized prior to tower installation.
- C4-5 The commenter notes that Mountain House Road is a historic road and expresses concern that the project will have "unfavorable" visual impacts. While this road has been in existence for many years, the extensive research conducted for this document provided no indication that this road was eligible for the National Register of Historic Places or for the California Register of Historic Resources. Therefore, an analysis of impacts to the road as a historic resource is not required.
- Impacts to visual resources in the Central Segment of the project, which is near Mountain House, are analyzed in Section 4.15.3.2 of the EIS/EIR. The Proposed Project would cross Mountain House Road at Vasco Road, adjacent to the Tracy Substation. Addition of the Project in this area will have a small incremental effect to existing scenic quality due to the presence of the substation, pumping plant and dozens of existing transmission towers; it will not meet any thresholds for determining that the Project will result in significant direct, indirect, or cumulative impacts to visual resources.

- C4-6 The commenter expresses concern regarding cumulative impacts related to agriculture, EMF, noise, and visual resources, of several existing transmission lines as well as the proposed transmission line on their property. Cumulative impacts are analyzed in Section 4.17 (Cumulative Effects Analysis) of the EIS/EIR.
- The commenter asserts that farming methods (i.e., crop dusting) have to be altered to accommodate the transmission lines. Section 4.16 (Agriculture) identifies the potential for minor impacts to agriculture operations, including crop dusting, as a result of the permanent presence of transmission infrastructure. However, construction and operation of the Proposed Project would not result in the permanent preclusion of future agriculture use as continued agriculture practices are generally compatible with the presence of transmission lines.
- C4-7 The commenter's statement regarding the difficulty in maintaining their livelihood and lifestyle because of the development of energy-related projects on and near their property, as well as their concern about increased cancer risk due to an increase in EMF exposure, are acknowledged. Refer to responses to comments C4-2 and C4-4 regarding transmission line hazards. The U.S. EPA has concluded that after more than two decades of research to determine whether elevated EMF is related to an increased risk of cancers, such as childhood leukemia, the general scientific consensus is that, thus far, the evidence available is weak and is not sufficient to establish a definitive cause-effect relationship (for example, see <http://www3.epa.gov/radtown/electric-magnetic-fields.html>).
- C4-8 The commenter expresses concern regarding the decrease of property value and agriculture use due to the presence of transmission lines. See Section 4.13 (Socioeconomics) and response to comment C5-5 for information regarding the impacts of transmission lines on property value. As stated in Section 4.2 (Agriculture), the presence of transmission lines is generally compatible with agriculture use (e.g., agriculture operations could continue within the easement and around the towers) and would not substantially impair the use of agriculture land.
- C4-9 The commenter requests that Western acquire her entire property for the Proposed Project. Western will only acquire what is needed for the purpose of the transmission line easements.
- C4-10 The commenter presents a study the health effects of EMF exposure that, in the commenter's opinion, confirms their concern about the health effects from existing power lines. The study cited examined the records of 854 cancer patients on the island of Tasmania and found a lower incidence of cancer per capita for those who lived at least 300 meters away from a transmission line compared to those who lived less than 50 meters away from a transmission line. The commenter's residence is at least 150 meters away from any transmission line, and approximately 35 meters away from the distribution line that supplies power to the residence and ranch buildings. Because exposure decreases with distance from the source, available information indicates that electric appliances and the wiring in the walls and electric panels are more responsible for EMF exposure inside the average residence than from nearby transmission or distribution lines.

Responses to Comment Set C5 – Dolores Kuhn 2

- C5-1 The commenter expresses concern regarding cumulative impacts of several existing transmission lines, other utility infrastructure, and the proposed transmission line on their property. Refer to responses to comments C4-1 and C4-6.
- C5-2 Refer to response to comment C4-4 regarding EMF exposure from transmission lines.
- C5-3 The comment states that noise levels will increase and that residences experience audible noise from the existing transmission lines, especially during wet weather. This impact is disclosed and identified as less than significant in the EIS/EIR under Impact NOISE-2 (Result in a substantial permanent increase in ambient noise levels (above 5 dBA Leq) at sensitive receptor locations above levels existing without the Project).
- C5-4 The commenter expresses concern regarding impacts to Mountain House Road. Refer to response to comment C4-5.
- C5-5 The commenter expresses concern regarding the decrease of property value by the presence of transmission lines. See Section 4.13 of the EIS/EIR, Impact SE-5 (Substantial decrease in property values), for a detailed discussion regarding impacts to property value. Impacts of transmission lines on property value could include factors such as a perceived health and safety risks posed by the lines (see the discussion of EMF in Section 4.11 of the EIS/EIR), the visibility of the line from the subject property, and the potential for increased traffic, noise, and dust to occur during construction and operation activities. However, there are no definitive answers about the degree to which the presence of a transmission line may affect property value.

Responses to Comment Set D1 – Public Hearing, Los Banos

- D1-1 Refer to response to comment A4-2 regarding DWR's role in operations of the Joint Use Facilities.
- D1-2 Refer to response to comment A4-3 regarding DWR's role as a Responsible Agency under CEQA.
- D1-3 The commenter's opposition to the proposed project and alternatives will be considered by Western and the Authority. It is not possible to upgrade or modify the existing transmission towers as they are not owned by Western or if they are Western-owned, cannot accommodate two additional circuits.
- D1-4 The commenter's expressed understanding of the project need is noted.
- D1-5 Refer to response to comment D1-4 regarding the ability to modify or upgrade existing transmission towers as an alternative to building new transmission support structures.
- D1-6 Refer to response to comment C1-4 regarding the feasibility of locating the proposed transmission line between existing transmission corridors. Western also seeks to minimize crossings of the existing high voltage transmission lines, which would increase reliability by providing more space between circuits.
- D1-7 Refer to response to comment C1-4 regarding the feasibility of locating the proposed transmission line between existing transmission corridors. Western also seeks to minimize crossings of the existing high voltage transmission lines, which would increase reliability by providing more space between circuits.

This page intentionally blank.

L.3 Comments Received on the Draft EIS/EIR

This section presents complete reproductions of each written comment correspondence received on the Draft EIS/EIR (i.e., letter, email, and comment card) with brackets and comment numbers.

This page intentionally blank.

Comment Set A1
Contra Costa Water District

Email: San Luis Transmission Project EIS/EIR Team

From: Fran Garland [<mailto:fgarland@ccwater.com>]
Sent: Monday, July 20, 2015 12:59 PM
To: Lash, Donald
Cc: Dino Angelosante
Subject: San Luis Transmission project

Hello Mr. Lash,

Contra Costa Water District purchased approximately 4,000 acres of grassland habitat in San Joaquin County off Corral Hollow Road (the former Etchelet property) as mitigation for the Los Vaqueros Reservoir Expansion project in 2012. The land is being managed under a Habitat Management Plan approved by both the California Department of Fish and Wildlife and the U.S. Fish and Wildlife Service. The land is being placed in a Conservation Easement, currently under review by the CDFW. It is our understanding that the San Luis Transmission project will cross the District's conservation property, and will install transmission facilities adjacent to existing transmission facilities owned by Modesto Irrigation District.

A1-1

As we start our review of the DEIR/DEIS, it may be helpful to meet with you to better understand the specific location of the transmission towers and related equipment, and the nature of the temporary and/or permanent impacts within CCWD's property. There are significant biological resources on the property, including large-flowered Fiddleneck, California red-legged frog, and numerous other species of concern.

A1-2

Please let me know if you are available to meet prior to the close of the comment period.

Thank You,

Fran Garland
Watershed and Environmental Planning Manager
Contra Costa Water District
(925) 688-8312

Comment Set A2

Central Valley Flood Protection Board

STATE OF CALIFORNIA – CALIFORNIA NATURAL RESOURCES AGENCY

EDMUND G. BROWN JR., GOVERNOR

CENTRAL VALLEY FLOOD PROTECTION BOARD

3310 El Camino Ave., Rm. 151
SACRAMENTO, CA 95821
(916) 574-0609 FAX: (916) 574-0682
PERMITS: (916) 574-2380 FAX: (916) 574-0682



August 5, 2015

Ms. Frances Mizuno
San Luis & Delta-Mendota Water Authority
15990 Kelso Road
Alameda, California 94514

Subject: CEQA Comments: San Luis Transmission Project, Draft Environmental Impact Report, SCH No.: 2013112059

Location: San Joaquin County

Dear Ms. Mizuno:

Central Valley Flood Protection Board (Board) staff has reviewed the subject document and provides the following comments:

A2-1

The proposed project is located within and or above Lone Tree Creek which is under Board jurisdiction. The Board enforces its Title 23, California Code of Regulations (23 CCR) for the construction, maintenance, and protection of adopted plans of flood control that protect public lands from floods. Adopted plans of flood control include federal-State facilities of the State Plan of Flood Control, regulated streams, and designated floodways. The geographic extent of Board jurisdiction includes the Central Valley, and all tributaries and distributaries of the Sacramento and San Joaquin Rivers, and the Tulare and Buena Vista basins (23 CCR, Section 2).

Pursuant to 23 CCR a Board permit is required prior to working in the Board's jurisdiction for the following:

- Placement, construction, reconstruction, removal, or abandonment of any landscaping, culvert, bridge, conduit, fence, projection, fill, embankment, building, structure, obstruction, encroachment, excavation, the planting, or removal of vegetation, and any repair or maintenance that involves cutting into the levee (23 CCR Section 6);
- Existing structures that predate permitting, or where it is necessary to establish the conditions normally imposed by permitting. The circumstances include those where responsibility for the encroachment has not been clearly established or ownership and use have been revised (23 CCR Section 6);
- Vegetation plantings require submission of detailed design drawings; identification of vegetation type; plant and tree names (both common and scientific); quantities of each type of plant and tree; spacing and irrigation method; a vegetative management plan for maintenance, inspection, and flood fight procedures (23 CCR Section 131).

A2-2

Comment Set A2, cont.
Central Valley Flood Protection Board

Ms. Frances Mizuno
August 5, 2015
Page 2 of 2

Other local, federal and State agency permits may be required and are the responsibility of the applicant to obtain.

A2-2
cont.

Board permit application forms and our complete 23 CCR regulations can be found on our website at <http://www.cvfpb.ca.gov/>. Maps of the Board's jurisdiction including all tributaries and distributaries of the Sacramento and San Joaquin Rivers, and Board designated floodways are also available on a Department of Water Resources website at <http://gis.bam.water.ca.gov/bam/>.

A2-3

Additional Considerations Related to Potential Impacts of Vegetation and Hydraulics

Accumulation and establishment of woody vegetation that is not managed may have negative impacts on channel capacity and may increase the potential for levee over-topping or other failure. When vegetation develops and becomes habitat for wildlife, maintenance to initial baseline conditions typically becomes more difficult as the removal of vegetative growth may be subject to federal and State resource agency requirements for on-site mitigation. The proposed project should include mitigation measures to avoid decreasing floodway channel capacity.

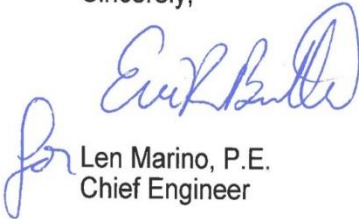
A2-4

Adverse hydraulic impacts of proposed encroachments could impede flood flows, reroute flood flows, and/or increase sediment accumulation. The proposed project should include mitigation measures for channel and levee improvements and maintenance to prevent and/or reduce hydraulic impacts. If possible off-site mitigation outside of the Board's jurisdiction should be used when mitigating for vegetation removed at the project location.

A2-5

If you have any questions please contact James Herota at (916) 574-0651, or via email at james.herota@water.ca.gov.

Sincerely,



Len Marino, P.E.
Chief Engineer

cc: Governor's Office of Planning and Research
State Clearinghouse
1400 Tenth Street, Room 121
Sacramento, California 95814

Comment Set A3 Central Valley Regional WQCB



Central Valley Regional Water Quality Control Board

7 August 2015

Frances Mizuno
San Luis & Delta-Mendota Water Authority
15990 Kelso Road
Byron, CA 94514

CERTIFIED MAIL
7014 2870 0000 7535 4821

COMMENTS TO REQUEST FOR REVIEW FOR THE DRAFT ENVIRONMENTAL IMPACT REPORT, SAN LUIS TRANSMISSION PROJECT, SCH# 2013112059, ALAMEDA COUNTY

Pursuant to the San Luis & Delta-Mendota Water Authority's 17 July 2015 request, the Central Valley Regional Water Quality Control Board (Central Valley Water Board) has reviewed the *Request for Review for the Draft Environment Impact Report* for the San Luis Transmission Project, located in Alameda County.

Our agency is delegated with the responsibility of protecting the quality of surface and groundwaters of the state; therefore our comments will address concerns surrounding those issues.

Construction Storm Water General Permit

Dischargers whose project disturb one or more acres of soil or where projects disturb less than one acre but are part of a larger common plan of development that in total disturbs one or more acres, are required to obtain coverage under the General Permit for Storm Water Discharges Associated with Construction Activities (Construction General Permit), Construction General Permit Order No. 2009-009-DWQ. Construction activity subject to this permit includes clearing, grading, grubbing, disturbances to the ground, such as stockpiling, or excavation, but does not include regular maintenance activities performed to restore the original line, grade, or capacity of the facility. The Construction General Permit requires the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP).

For more information on the Construction General Permit, visit the State Water Resources Control Board website at:
http://www.waterboards.ca.gov/water_issues/programs/stormwater/constpermits.shtml.

A3-1

KARL E. LONGLEY ScD, P.E., CHAIR | PAMELA C. CREEDON P.E., BCCE, EXECUTIVE OFFICER

11020 Sun Center Drive #200, Rancho Cordova, CA 95670 | www.waterboards.ca.gov/centralvalley



Comment Set A3, cont. Central Valley Regional WQCB

San Luis Transmission Project
Alameda County

- 2 -

7 August 2015

Phase I and II Municipal Separate Storm Sewer System (MS4) Permits¹

The Phase I and II MS4 permits require the Permittees reduce pollutants and runoff flows from new development and redevelopment using Best Management Practices (BMPs) to the maximum extent practicable (MEP). MS4 Permittees have their own development standards, also known as Low Impact Development (LID)/post-construction standards that include a hydromodification component. The MS4 permits also require specific design concepts for LID/post-construction BMPs in the early stages of a project during the entitlement and CEQA process and the development plan review process.

A3-2

For more information on which Phase I MS4 Permit this project applies to, visit the Central Valley Water Board website at:

http://www.waterboards.ca.gov/centralvalley/water_issues/storm_water/municipal_permits/.

For more information on the Phase II MS4 permit and who it applies to, visit the State Water Resources Control Board at:

http://www.waterboards.ca.gov/water_issues/programs/stormwater/phase_ii_municipal.shtml

Industrial Storm Water General Permit

Storm water discharges associated with industrial sites must comply with the regulations contained in the Industrial Storm Water General Permit Order No. 2014-0057-DWQ.

A3-3

For more information on the Industrial Storm Water General Permit, visit the Central Valley Water Board website at:

http://www.waterboards.ca.gov/centralvalley/water_issues/storm_water/industrial_general_permits/index.shtml.

Clean Water Act Section 404 Permit

If the project will involve the discharge of dredged or fill material in navigable waters or wetlands, a permit pursuant to Section 404 of the Clean Water Act may be needed from the United States Army Corps of Engineers (USACOE). If a Section 404 permit is required by the USACOE, the Central Valley Water Board will review the permit application to ensure that discharge will not violate water quality standards. If the project requires surface water drainage realignment, the applicant is advised to contact the Department of Fish and Game for information on Streambed Alteration Permit requirements.

A3-4

If you have any questions regarding the Clean Water Act Section 404 permits, please contact the Regulatory Division of the Sacramento District of USACOE at (916) 557-5250.

¹ Municipal Permits = The Phase I Municipal Separate Storm Water System (MS4) Permit covers medium sized Municipalities (serving between 100,000 and 250,000 people) and large sized municipalities (serving over 250,000 people). The Phase II MS4 provides coverage for small municipalities, including non-traditional Small MS4s, which include military bases, public campuses, prisons and hospitals.

Comment Set A3, cont. Central Valley Regional WQCB

San Luis Transmission Project
Alameda County

- 3 -

7 August 2015

Clean Water Act Section 401 Permit – Water Quality Certification

If an USACOE permit (e.g., Non-Reporting Nationwide Permit, Nationwide Permit, Letter of Permission, Individual Permit, Regional General Permit, Programmatic General Permit), or any other federal permit (e.g., Section 9 from the United States Coast Guard), is required for this project due to the disturbance of waters of the United States (such as streams and wetlands), then a Water Quality Certification must be obtained from the Central Valley Water Board prior to initiation of project activities. There are no waivers for 401 Water Quality Certifications.

A3-5

Waste Discharge Requirements

If USACOE determines that only non-jurisdictional waters of the State (i.e., "non-federal" waters of the State) are present in the proposed project area, the proposed project will require a Waste Discharge Requirement (WDR) permit to be issued by Central Valley Water Board. Under the California Porter-Cologne Water Quality Control Act, discharges to all waters of the State, including all wetlands and other waters of the State including, but not limited to, isolated wetlands, are subject to State regulation.

A3-6

For more information on the Water Quality Certification and WDR processes, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/centralvalley/help/business_help/permit2.shtml.

Regulatory Compliance for Commercially Irrigated Agriculture

If the property will be used for commercial irrigated agricultural, the discharger will be required to obtain regulatory coverage under the Irrigated Lands Regulatory Program. There are two options to comply:

1. **Obtain Coverage Under a Coalition Group.** Join the local Coalition Group that supports land owners with the implementation of the Irrigated Lands Regulatory Program. The Coalition Group conducts water quality monitoring and reporting to the Central Valley Water Board on behalf of its growers. The Coalition Groups charge an annual membership fee, which varies by Coalition Group. To find the Coalition Group in your area, visit the Central Valley Water Board's website at:
http://www.waterboards.ca.gov/centralvalley/water_issues/irrigated_lands/app_approval/index.shtml; or contact water board staff at (916) 464-4611 or via email at IrrLands@waterboards.ca.gov.
2. **Obtain Coverage Under the General Waste Discharge Requirements for Individual Growers, General Order R5-2013-0100.** Dischargers not participating in a third-party group (Coalition) are regulated individually. Depending on the specific site conditions, growers may be required to monitor runoff from their property, install monitoring wells, and submit a notice of intent, farm plan, and other action plans regarding their actions to comply with their General Order. Yearly costs would include State administrative fees (for example, annual fees for farm sizes from 10-100 acres are currently \$1,084 + \$6.70/Acre); the cost to prepare annual monitoring reports; and water quality monitoring costs. To enroll as an Individual Discharger under the Irrigated Lands Regulatory

A3-7

Comment Set A3, cont.
Central Valley Regional WQCB

San Luis Transmission Project
Alameda County

- 4 -

7 August 2015

Program, call the Central Valley Water Board phone line at (916) 464-4611 or e-mail board staff at IrrLands@waterboards.ca.gov.

A3-7
cont.

Low or Limited Threat General NPDES Permit

If the proposed project includes construction dewatering and it is necessary to discharge the groundwater to waters of the United States, the proposed project will require coverage under a National Pollutant Discharge Elimination System (NPDES) permit. Dewatering discharges are typically considered a low or limited threat to water quality and may be covered under the General Order for *Dewatering and Other Low Threat Discharges to Surface Waters* (Low Threat General Order) or the General Order for *Limited Threat Discharges of Treated/Untreated Groundwater from Cleanup Sites, Wastewater from Superchlorination Projects, and Other Limited Threat Wastewaters to Surface Water* (Limited Threat General Order). A complete application must be submitted to the Central Valley Water Board to obtain coverage under these General NPDES permits.

A3-8

For more information regarding the Low Threat General Order and the application process, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/general_orders/r5-2013-0074.pdf

For more information regarding the Limited Threat General Order and the application process, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/general_orders/r5-2013-0073.pdf

If you have questions regarding these comments, please contact me at (916) 464-4684 or tcleak@waterboards.ca.gov.



Trevor Cleak
Environmental Scientist

cc: State Clearinghouse unit, Governor's Office of Planning and Research, Sacramento

Comment Set A4

State of California Department of Water Resources

STATE OF CALIFORNIA – CALIFORNIA NATURAL RESOURCES AGENCY

EDMUND G. BROWN JR., Governor

DEPARTMENT OF WATER RESOURCES

1416 NINTH STREET, P.O. BOX 942836
SACRAMENTO, CA 94236-0001
(916) 653-5791



August 12, 2015

Western Area Power Administration
Mr. Donald Lash, NEPA Document Manager
114 Parkshore Drive
Folsom, California 95630

RE: Draft EIS/EIR for San Luis Transmission Project

Dear Mr. Lash:

The purpose of this letter is to request a reasonable time extension to submit comments on the Draft EIS/EIR for the San Luis Transmission Project (SLTP). The proposed San Luis Transmission Project comprises 95 miles of new transmission lines within easements ranging from 125 to 250 feet wide through Alameda, San Joaquin, Stanislaus, and Merced Counties along the foothills of the Diablo Range in the western San Joaquin Valley, California. Interconnection is proposed at the substations for the San Luis joint-use CVP/SWP facilities.

A4-1

Department of Water Resources (DWR) has a direct and substantial interest in this significant project. The San Luis Joint Use Facilities are the joint projects of the Central Valley Project and the State Water Project (SWP). As owner and operator of the SWP, DWR entered into the Joint Use Facilities Agreement (Agreement) with the Bureau of Reclamation (USBR). This Congressionally-approved Agreement governs construction, operation and maintenance of the San Luis facilities. Pursuant to that agreement, DWR and the Bureau share the costs of construction, operation and maintenance and the related management level decision making, and DWR is granted the right and undertakes the obligation of operating and maintaining the San Luis facilities. DWR's operational control of the San Luis facilities includes the substations which are described as part of the SLTP. (DWR's role was recently affirmed in *Order Denying Rehearing*, 151 FERC ¶ 61,252, Docket Nos. ER15-223-001, et al. (June 22, 2015).) Since any interconnection to the substations will require DWR's concurrence pursuant to the Agreement, DWR should have been recognized as a cooperating/responsible agency in the draft EIS/EIR and afforded consultation prior to the issuance of the draft EIS/EIR.

A4-2

A4-3

While there were discussions between and amongst the USBR, Western, and DWR during the project planning phase prior to the issuance of the NOP, there has been essentially no project specific consultation with DWR since the NOP was issued. DWR anticipates these discussions will occur in the recently commenced Joint Use Facilities roles and responsibilities dialogue between and amongst Western, USBR, and DWR. Meanwhile, we request an extension to complete our comments on the Draft EIS/EIR for the SLTP.

A4-4

A4-5

Comment Set A4, cont.
State of California Department of Water Resources

Western Area Power Administration
August 12, 2015
Page two

Please contact me at (916) 653-8583 or Sheree Edwards of my staff at (916) 653-8029, if you have any questions.

Sincerely,

A handwritten signature in blue ink, appearing to read "D. R. Duval".

Dave R. Duval, Chief
Division of Operations and Maintenance
Department of Water Resources

cc: Mr. Jim Thomas, Chief, SLFD, DWR
Ms. Veronica Hicks, Chief, Power and Risk Office, DWR
Mr. Mark E. Andersen, SWP Assistant Deputy Director, DWR
Mr. Carl A. Torgersen, SWP Deputy Director, DWR
Mr. Kevin Howard, Power Operations Manager, WAPA
Mr. Barry Mortimeyer, Chief, Power Operations Division, USBR

Comment Set A5

Stanislaus County Department of Environmental Resources

Public Meeting Comment Form

San Luis Transmission Project

Draft Environmental Impact Statement/Environmental Impact Report



Please use this form to record your comments on the Environmental Impact Statement (EIS)/Environmental Impact Report (EIR). Comments must be received by **August 31, 2015**, for consideration in the development of the Final EIS/EIR. You may submit your written comments in any of the following ways:

- 1) **At the Public Meeting:** Deposit this form in the comment box before leaving this meeting.
- 2) **By Mail:** Mail this form to:
Mr. Donald Lash, NEPA Document Manager
Western Area Power Administration, Sierra Nevada Region
114 Parkshore Drive
Folsom, CA 95630
- 3) **By Electronic Mail:** Email to SLTPEIS-EIR@wapa.gov
- 4) **By Fax:** Fax your comments, along with your name and address, to **916-353-4772**

Your name and address could be disclosed under the Freedom of Information Act (FOIA).

Name: Jami Aggers, Director
Organization/Affiliation: Stanislaus County, Dept. of Environmental Resources
Address: 3800 Cornucopia Way, Ste C
City, State, Zip Code: Modesto, CA 95358

Comments: The following comments are in addition to those submitted previously:

Our understanding of the project is that the preferred alternative is to construct the new transmission line to the East of the existing lines.

A5-1

The County would prefer Option 2, which would construct the new transmission line to the West of the existing lines because it would have less of an impact to the following parcels the County owns which we lease out for grazing: 025-017-013
025-017-020

A5-2

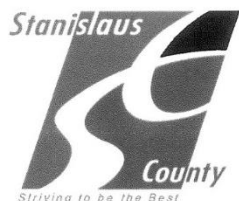
Thank you for your consideration.

Visit www.SLTPEIS-EIR.com for project information.



Provide your mailing address to receive future notices about the San Luis Transmission Project EIS/EIR.

Comment Set A6 Stanislaus County Environmental Review Committee



CHIEF EXECUTIVE OFFICE

Stan Risen
Chief Executive Officer

Patricia Hill Thomas
Chief Operations Officer/
Assistant Executive Officer

Keith D. Boggs
Assistant Executive Officer

Jody Hayes
Assistant Executive Officer

1010 10th Street, Suite 6800, Modesto, CA 95354
Post Office Box 3404, Modesto, CA 95353-3404

Phone: 209.525.6333 Fax 209.544.6226

STANISLAUS COUNTY ENVIRONMENTAL REVIEW COMMITTEE

August 26, 2015

E-mail: SLTPEIS-EIR@wapa.gov

Don Lash, NEPA Document Manager
Western Area Power Administration
Sierra Nevada Region
114 Parkshore Drive
Folsom, CA 95630

SUBJECT: ENVIRONMENTAL REFERRAL – DRAFT ENVIRONMENTAL IMPACT STATEMENT (EIS) & ENVIRONMENTAL IMPACT REPORT (EIR) FOR THE PROPOSED SAN LUIS TRANSMISSION PROJECT (SLTP)

Mr. Lash:

Stanislaus County has reviewed the draft environmental document for the Proposed San Luis Transmission Project. We wish to offer several comments and questions regarding the proposed project.

Existing Conditions: Crows Landing Industrial Business Park and General Aviation Airport

On January 21, 2014, Ms. Tera Chumley of the Stanislaus County Environmental Review Committee (ERC) provided the Western Area Power Administration (Western) with comments on the proposed project as part of project scoping (see attached ERC response letter dated January 14, 2014). The comments were well summarized in Appendix A of the Draft EIS/EIR. Since that time, the County has moved forward with the redevelopment of the former Crows Landing Naval Airfield and the creation of a new General Aviation airport, and our efforts do not appear to be reflected in the Draft EIS/EIR.

Section 3.14.1.1 of the Draft EIS/EIR states:

Stanislaus County has pursued potential development of an industrial park at the airport, and re-opening the airport for private aircraft, leading to development of the Crows Landing Airport Land Use Compatibility Plan in June 2013. The County has not yet produced an airport master plan for the facility, and no

A6-1

A6-2

STRIVING TO BE THE BEST COUNTY IN AMERICA

Comment Set A6, cont.

Stanislaus County Environmental Review Committee

ENVIRONMENTAL REFERRAL – DRAFT ENVIRONMENTAL IMPACT STATEMENT (EIS) & ENVIRONMENTAL IMPACT REPORT (EIR) FOR THE PROPOSED SAN LUIS TRANSMISSION PROJECT (SLTP)

August 26, 2015

Page 2

construction has occurred at the abandoned field since NASA transferred ownership of the facility to the County in 2004. This description does not accurately capture the existing conditions at the former airfield. The County has worked actively with the U.S. government since conveyance, groundwater and soil remediation have been ongoing, and blighted structures have been removed. Moreover, the site has been used for aeronautical activity since conveyance to support law enforcement and wildfire suppression. In addition, the County has completed a draft Airport Layout Plan (ALP) and Airport Land Use Compatibility Plan (ALUCP) through consultation with the California Department of Transportation (Caltrans), Division of Aeronautics. (Although inferred by the Draft EIS/EIR, a Master Plan is not a required airport planning document nor is it required to operate an airport in California.) In October 2014, Stanislaus County initiated efforts pursuant to the California Environmental Quality Act (CEQA) in support of the Crows Landing Industrial Business Park, which will be located approximately one mile east of I-5 and west of the community of Crows Landing. A Notice of Preparation (NOP) to prepare an EIR for the Crows Landing Industrial Business Park, which includes the airport, was circulated from October 31 to November 30, 2014 (State Clearinghouse No. 2014102035 [see attached copy]).

A6-2
cont.

The County requests that the Final EIS/EIR include a more accurate description of the existing conditions, ongoing site use, and acknowledge the County's ongoing planning and CEQA process.

Airspace Analysis

The County reviewed the proposed project description to identify the potential effects of the transmission facilities on airspace associated with current emergency operations and forthcoming General Aviation operations at Crows Landing. We determined that an airspace analysis could not be performed at this time because the project description did not provide sufficient detail. Chapter 2 of the Draft EIS/EIR states:

A6-3

At this time, the exact locations and quantities of project components (e.g., access roads, staging areas, pulling sites) are unknown and, in some cases, quantities of Project components are conservatively estimated (see Appendix E). To provide flexibility in siting Project components, particularly access roads that may extend outside of the proposed easements, a one-mile buffer was added on the west side of the Proposed Project and alternative corridors. The buffer was extended up to I-5 on the east side of the Proposed Project and alternative corridors, except where the Project would be located east of I-5 near the Dos Amigos Substation (page 2-1).

In addition, Table 2.1, "Typical Structure Dimensions," shows that the circuit lattices and steel poles can reach heights of up to 170 feet above ground level, with four to five structures constructed per corridor mile (page 2-5).

Comment Set A6, cont.

Stanislaus County Environmental Review Committee

ENVIRONMENTAL REFERRAL – DRAFT ENVIRONMENTAL IMPACT STATEMENT (EIS) & ENVIRONMENTAL IMPACT REPORT (EIR) FOR THE PROPOSED SAN LUIS TRANSMISSION PROJECT (SLTP)

August 26, 2015

Page 3

As documented in our scoping letter dated January 21, 2014, the proposed project has the potential to create new obstructions to airspace surfaces associated with Crows Landing. As shown on the airspace map submitted with our January 21, 2014 comments, a portion of the pipeline corridor is located with our approach surface, horizontal surface, and conical surface. The elevations of the conical and approach surfaces increase with distance from the airfield. Contour intervals are noted on the airspace map. Although FAA records indicate that the airfield is currently closed, it is likely to be in operation prior to the construction of the proposed Project, and a detailed airspace analysis is necessary to determine the extent to which impacts are likely. Details containing exact locations and top elevations of the proposed structures will be required for this analysis.

A6-3
cont.

EIS/EIR Analysis of Airport Impacts

Section 4.14.1 of the Draft EIS/EIR indicates that a significant, adverse effect on traffic and transportation would occur if the project caused a change in air traffic patterns (Impact TRAFFIC-6) or conflicts with current or future federal, regional, state, and local airport plans (Impact TRAFFIC-7). The County appreciates that the impact criterion refers to current and future airport plans. The Crows Landing Industrial Business Park is a project that includes a future airport for which CEQA studies are underway, and the forthcoming Crows Landing Airport must be considered in this impact analysis. The County anticipates receiving a license from the Caltrans Division of Aeronautics in 2017.

A6-4

Impact TRAFFIC-6. The Draft EIS/EIR states that proposed project structures would be as close as 2.1 miles from the Tracy Airport, and three miles from both the crop duster field near Westley and the closed airport near the community of Crows Landing, which is sufficient to minimize conflicts with the airports (page 4-106). The document also states that since new structures would be located adjacent to existing transmission lines, they would not present a new hazard to cause changes in air traffic pattern and effects would be negligible under NEPA and less than significant under CEQA.

A6-5

As noted in the County's airspace policy for Crows Landing, airspace impacts can occur up to 20,000 feet from the runway, or up to approximately 3.8 miles, and portions of the corridor pass within this airspace. The ground surface within the project corridor varies greatly, citing structures near to existing structures does not necessarily mean that additional impacts will not occur. Additional analysis will be required to determine the extent of potential airspace impacts once transmission facilities are sited more precisely. Therefore, the County requests that the impact evaluation and mitigation measures in the EIS/EIR be amended to include the following, either as part of its project description or as part of its discussion of potential impacts and mitigation measures:

- The Project proponent will work with the County to prepare a detailed airspace analysis during subsequent project design phases that more precisely site the corridor location and structure locations. The results of the airspace analysis would be used to avoid and minimize potential airspace impacts and used as input to the final design plans.
- Based on the results of the airspace analysis, the Project proponent will need to obtain an FAA-7460 analysis from the FAA based on the location of new structures and use of

Comment Set A6, cont.

Stanislaus County Environmental Review Committee

ENVIRONMENTAL REFERRAL – DRAFT ENVIRONMENTAL IMPACT STATEMENT (EIS) & ENVIRONMENTAL IMPACT REPORT (EIR) FOR THE PROPOSED SAN LUIS TRANSMISSION PROJECT (SLTP)

August 26, 2015

Page 4

tall construction equipment (i.e., cranes) to determine the need for lighting and marking of new facilities and equipment to reduce hazards to aviators. (Although FAA's database indicates that the airport is closed, the County is working with FAA to revise that status, and it will complete doing so by the time an analysis is performed.) For more information on the FAA 7460 analysis, go to: <https://oeaaa.faa.gov/oeaaa/external/portal.jsp>.

A6-5
cont.

Impact TRAFFIC-7. The Draft EIS/EIR concludes that "Because the Project would be located a minimum of 2.1 miles from any active or planned airport, and because its structures would be located adjacent to existing transmission lines, it would not present a new hazard to air traffic in the region. It would not cause a conflict with current or future airport plans. No impact would occur" (page 4-107).

A6-6

As discussed in relation to Impact TRAFFIC-6, this conclusion associated with Impact TRAFFIC-7 may not be correct. The project is located in an area with highly variable terrain, and placing new structures near to existing structures does not exclude the potential for additional hazards to aviation. We request that the impact be revised in the same manner as indicated previously in relation to Impact TRAFFIC-6 to avoid and minimize hazards to air traffic in the region and avoid conflicts with current and future airport plans.

Biological Resources

Several biological mitigation measures indicate that compensatory mitigation will be provided for impacts to various species, including the burrowing (MM BIO-17) and the Swainson's Hawk (MM BIO-21). The Draft EIR states that such mitigation would comply with regulatory guidance and would likely be achieved through the purchase of credits at a conservation bank, establishing a conservation easement, donating funds to an approved in-lieu fee program, or restoring habitats affected by the Project (page 4-45).

A6-7

FAA warns against the creation of new wildlife attractants within 10,000 feet of airports that support turbine operations and within five miles of approach departure surfaces. Both the burrowing owl and the Swainson's hawk have the potential to pose wildlife hazards to aviation, and the establishing of a conservation easement or performing restoration within the areas identified by FAA could increase hazards to operations. To prevent wildlife hazards to aviation, the location of any conservation easement or habitat restoration proposed in Stanislaus County should be located outside of an established Airport Influence Area.

Zoning Ordinance General Provisions

As noted in our correspondence of January 21, 2014, Section 201.08.020(C) of the County's Zoning Ordinance General Provisions requires that the routes of proposed electrical transmission lines be submitted to the County Planning Commission for review and recommendation prior to acquisition or right when such lines are not within public streets or highways.

A6-8

Section 2.1.2.1 of the Draft EIS/EIR states that "Western does not have existing transmission line easements within the Project Area, and therefore, would need to acquire easements for the entire Project" (page 2-4). The Draft EIS/EIR does neither identifies the County's requirement

Comment Set A6, cont.
Stanislaus County Environmental Review Committee

ENVIRONMENTAL REFERRAL – DRAFT ENVIRONMENTAL IMPACT STATEMENT (EIS) & ENVIRONMENTAL IMPACT REPORT (EIR) FOR THE PROPOSED SAN LUIS TRANSMISSION PROJECT (SLTP)

August 26, 2015

Page 5

nor states that Western will comply with the County's Zoning Ordinance prior to the acquisition of easements.

**A6-8
cont.**

Cumulative Impacts

Section 4.17, "Cumulative Impacts," correctly identifies the Crows Landing Airport in its impacts analysis (Table 4.17-1). In an effort to provide a conservative analysis, the cumulative analysis "assumes that all projects in the cumulative scenario are built and operating during the operating lifetime of the Proposed Project. The analysis reflects the studies previous conclusion that no impacts will occur in association with the new Crows Landing Airport." Based on the foregoing discussion, this impact should be revised to indicate potential impacts to airspace could occur and the mitigation measures that will be used to avoid and minimize such impacts.

A6-9

The County appreciates the opportunity to review the environmental document for this important project, and we appreciate the inclusion of our previous comments in Appendix A of the EIS/EIR. Working together, we can avoid and minimize impacts to our environment and those working in Stanislaus County. Should you have any questions, please don't hesitate to reach me by telephone (209) 652-1514 or email (boggsk@stancounty.com).

Sincerely,


Keith D. Boggs, Assistant Executive Officer
Environmental Review Committee

KDB:LH:ss

Attachments: Copy of Stanislaus County ERC correspondence/response letter dated
January 21, 2014
Notice of Preparation, Crows Landing Industrial Business Park

cc: ERC Members
Lisa Harmon, Mead & Hunt, Inc.
Terry Barrie, Chief, California Department of Transportation, Division of Aeronautics

Comment Set A6, cont. Stanislaus County Environmental Review Committee



CHIEF EXECUTIVE OFFICE

Stan Risen
Chief Executive Officer

Patricia Hill Thomas
Chief Operations Officer/
Assistant Executive Officer

Keith D. Boggs
Assistant Executive Officer

1010 10th Street, Suite 6800, Modesto, CA 95354
Post Office Box 3404, Modesto, CA 95353-3404

Phone: 209.525.6333 Fax 209.544.6226

A6-10

STANISLAUS COUNTY ENVIRONMENTAL REVIEW COMMITTEE

January 21, 2014

E-mail: SLTPEIS-EIR@wapa.gov

Don Lash, NEPA Document Manager
Western Area Power Administration
Sierra Nevada Region
114 Parkshore Drive
Folsom, CA 95630

**SUBJECT: ENVIRONMENTAL REFERRAL – SAN LUIS AND DELTA-MENDOTA WATER
AUTHORITY – SAN LUIS TRANSMISSION PROJECT**

Mr. Lash:

The Stanislaus County Environmental Review Committee (ERC) understands that the San Luis and Delta-Mendota Water (Authority) and the Western Area Power Administration (Western) propose to construct, own, operate and maintain new transmission lines and appurtenances that will traverse corridors through Alameda, San Joaquin, Stanislaus, and Merced Counties.

The Notice of Preparation (NOP) indicates that a portion of the proposed project would be located on the west side of the Interstate 5 (I-5) corridor in Stanislaus County, approximately two miles to the west of the County's proposed Crows Landing Airport. The U.S. Government conveyed all right, title, and interest in the former Crows Landing Air Facility to Stanislaus County in 2004 in accordance with Public Law 106-82. Pursuant to that law, the County has taken title of the former airfield and is actively developing one of the former military runways as a public-use, general aviation airport. To that end, the County has prepared an Airport Layout Plan and an Airport Land Use Compatibility Plan, and it has embarked upon a CEQA process in October 2013. A NOP for our project is forthcoming in early spring.

The NOP circulated as "Correspondence No. 4" for the Authority's and Western's proposed project states that the steel structures used to support the line "... typically would be between 100 and 200 feet tall depending on site-specific conditions. A few taller structures may be required in some locations to address engineering constraints." The County is concerned that the proposed steel structures (towers) and lines may negatively impact the development and use of the proposed Crows Landing Airport and Stanislaus County's ongoing efforts to develop its proposed general aviation airport as depicted on the attached Draft Airport Layout Plan.

STRIVING TO BE THE BEST COUNTY IN AMERICA

Comment Set A6, cont.

Stanislaus County Environmental Review Committee

ENVIRONMENTAL REFERRAL – SAN LUIS AND DELTA-MENDOTA WATER AUTHORITY – SAN LUIS TRANSMISSION PROJECT

January 21, 2014

Page 2

A6-10
cont.

The County's primary concern is based on the locations and heights of the proposed tower/lines and their location within the Federal Aviation Administration (FAA) Part 77 airspace associated with the proposed Crows Landing Airport. The towers/lines could penetrate the airport's horizontal surface and negatively impact the approach/departure procedures (both visual and instruments) that will be established to protect the safety of Airport users and ensure the Airport's future operational viability.

To prevent potential conflicts, the following airspace and approach/departure interactions must be evaluated by the FAA through the FAA's Form 7460-1 airspace review process to determine their impact on the safe and efficient operations of the Crows Landing Airport:

- The proposed towers/lines appear to penetrate various Federal Aviation Regulation Part 77 Horizontal and Transitional Surfaces associated with the Crows Landing Airport – see attached Draft Inner Approach Plan;
- The proposed towers/lines might pose a negative/constraining factor in the establishment and use of various instrument approach procedures to/from the Airport; and
- The proposed towers/lines may require obstruction lighting and marking as a result of the FAA airspace review.

It is imperative that the presence of the proposed towers/lines be fully considered with respect to the location of the Crows Landing Airport and its anticipated aeronautical operations. The basic locational/height information provided in the "Notice of Preparation" (November 22, 2013) is insufficient to properly determine the impact of the towers/lines on the Airport at this time.

In addition to aviation, we submit the following comments/concerns:

Zoning Ordinance General Provisions. Section 21.08.020(C) of the Stanislaus Zoning Ordinance General Provisions requires that routes of proposed electrical transmission lines be submitted to the planning commission for review and recommendation prior to acquisition or right when such lines are not within public street or highway. The referral speaks of 125 to 250 foot wide right-of-way easements under facilities and improvements, but does not indicate if these already exist.

Access Roads. The scope of the project should identify and evaluate any new access roads to the transmission line right(s)-of-way.

Aesthetic Impacts. Transmission line facilities may impact the aesthetics of designated scenic routes and vistas. Visual impacts should be included in the scope of review.

The Stanislaus County ERC appreciates the opportunity to respond to this NOP, and we look forward to working with you to learn more about your project. Working together, we can identify and resolve potential conflicts between our proposed projects during our nearly parallel CEQA processes.

Comment Set A6, cont.

Stanislaus County Environmental Review Committee

**ENVIRONMENTAL REFERRAL – SAN LUIS AND DELTA-MENDOTA WATER AUTHORITY
– SAN LUIS TRANSMISSION PROJECT**

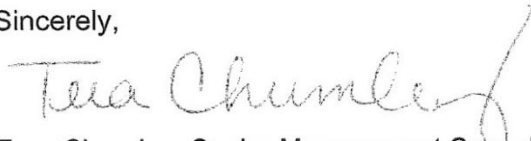
January 21, 2014

Page 3

Please do not hesitate to call me should you have questions on this letter or its attachments. I am happy to set up a meeting with your staff, County staff, and representatives from the Caltrans Division of Aeronautics who are knowledgeable of our proposed project.

**A6-10
cont.**

Sincerely,



Tera Chumley, Senior Management Consultant
Environmental Review Committee

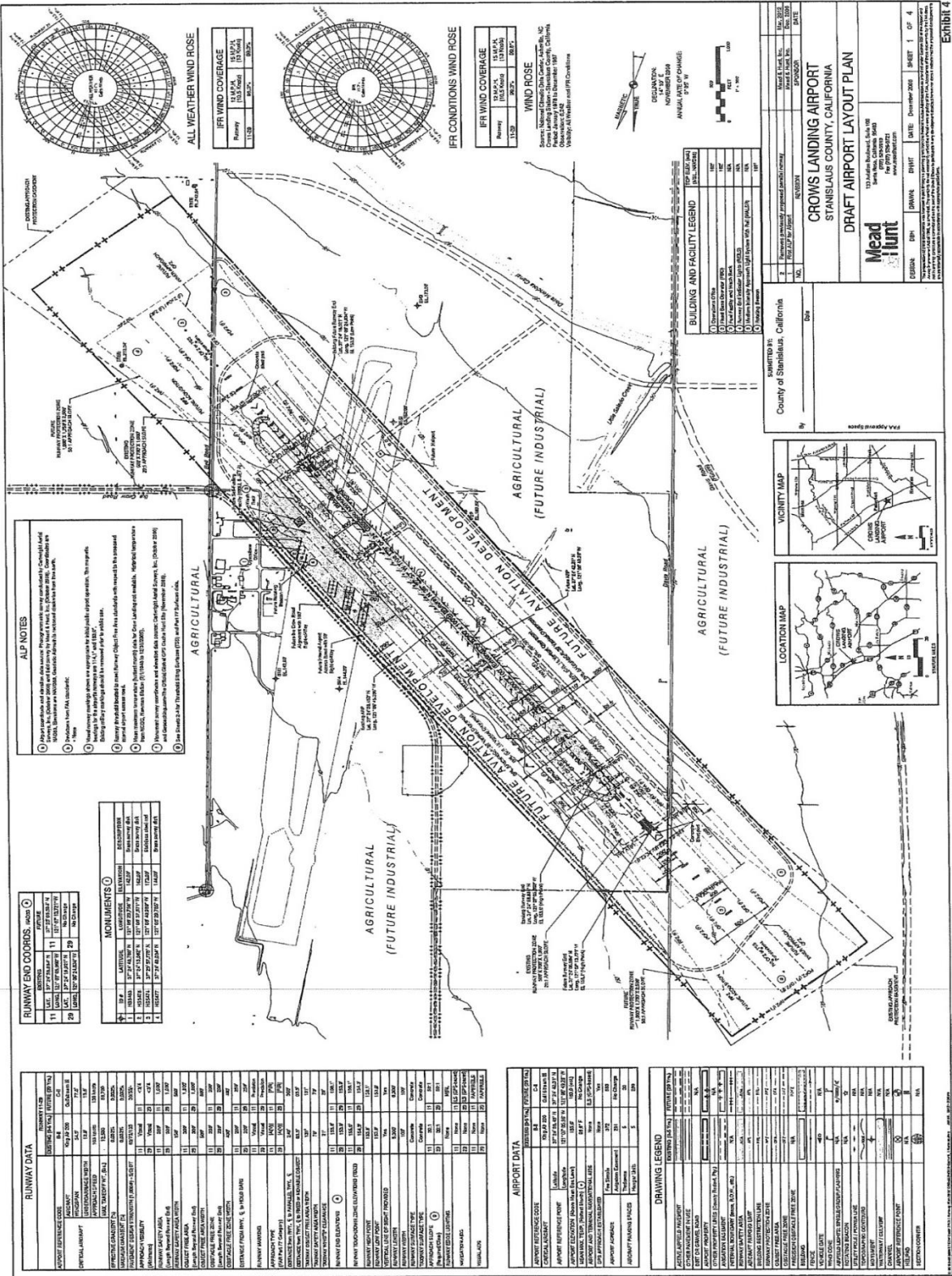
TC:ss

Attachments: Draft Airport Layout Plan
Draft Inner Approach Plan

cc: ERC Members
Lisa Harmon, Mead & Hunt, Inc.

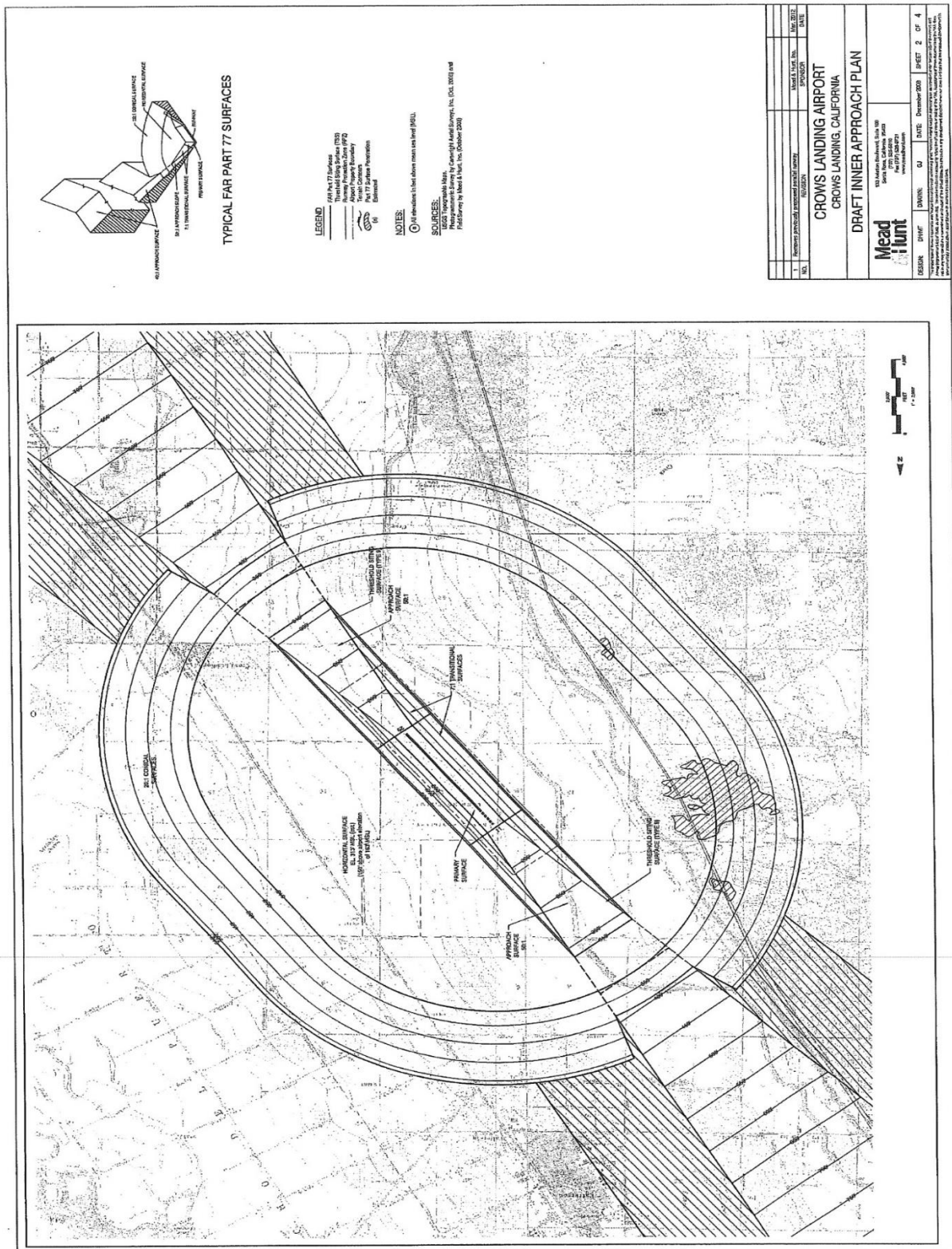
Comment Set A6, cont.
Stanislaus County Environmental Review Committee

BACKGROUND DATA: CROWS LANDING AIRPORT AND ENVIRONS CHAPTER 3



A6-10
cont.

Stanislaus County Environmental Review Committee



A6-10
cont.

Comment Set A6, cont.

Stanislaus County Environmental Review Committee

NOTICE OF PREPARATION

Date: October 13, 2014

To: State Clearinghouse, Responsible Agencies, Trustee Agencies, and Interested Parties

From: Keith Boggs
Assistant Executive Officer
Stanislaus County
1010 10th Street, Sixth Floor
Modesto, CA 95354
(boggsk@stancounty.com)

Subject: Notice of Preparation of a Draft Environmental Impact Report for the Proposed Crows Landing Industrial Business Park Project

A6-11

Stanislaus County will serve as the lead agency under the California Environmental Quality Act (CEQA) for the preparation of an Environmental Impact Report (EIR) for the proposed Crows Landing Industrial Business Park (CLIBP). The proposed project includes the adoption of a Specific Plan and zoning change to support the reuse of the former Crows Landing Air Facility and development of the CLIBP in western Stanislaus County. CLIPB development would include on- and off-site infrastructure and roadway improvements, the development of a general aviation airport on a former military runway, and amendments to the Stanislaus County Airport Land Use Compatibility Plan (ALUCP). All of these proposed actions are collectively referred to as the "proposed project." Comments on the NOP must be received by **5 p.m. on November 13, 2014**.

A lead agency must prepare a Notice of Preparation (NOP) to inform all responsible, trustee agencies, and the Governor's Office of Planning and Research of the forthcoming EIR. The NOP must provide sufficient information about a proposed project and its potential environmental impacts to allow agencies and individuals to formulate a meaningful response to the scope and content of the forthcoming EIR and provide environmental information and input pertaining to each agency's statutory responsibilities in connection with the proposed project. Another purpose of the NOP is to solicit input on alternatives that should be considered during EIR preparation.

Two public scoping meetings will be held during the NOP public review period to allow agencies and the public to ask questions or provide comments on the content of the forthcoming EIR.

Scoping Meetings: Proposed Crows Landing Industrial Business Park Project	
Thursday, October 23, 2014 6 p.m. to 8 p.m. Crows Landing Fire Station 22012 G Street Crows Landing, CA 95313	Thursday, October 30, 2014 6 p.m. to 8 p.m. City of Patterson, Council Chambers 1 Plaza Patterson, CA 95363

Comment Set A6, cont.

Stanislaus County Environmental Review Committee

Comments are invited from interested parties by 5 p.m. on November 13, 2014. Written comments or questions concerning the EIR must be directed to the County's Planning and Community Development Department at the following address:

Rachel Wyse, Associate Planner
Stanislaus County Planning & Community Development
1010 10th Street, Suite 3400
Modesto, CA 95354
(wyser@stancounty.com)

All comments must include the commenter's full name and address for staff to respond appropriately. Agencies that will use the EIR when considering permits or other discretionary approvals for the proposed project should provide the County with the name of a contact person.

The project location, description, and the potential environmental resources and issues that will be addressed in the EIR are presented in the following pages. Pursuant to California Code of Regulations (CCR) Section 15063(a) of the State CEQA Guidelines, the County did not prepare an Initial Study to determine whether the proposed project may have a significant effect on the physical environment, because it determined that an EIR will be required for the proposed project.

The proposed CLIBP is a new project that is being proposed by Stanislaus County. Two previous projects have been proposed on the project site: the "West Park Specific Plan" (2008) and the "West Park Logistics Center" (2011). Both projects were proposed by private entities, and neither is active. The CLIBP project is a new project proposed by Stanislaus County that remains entirely within the boundaries of the approximately 1,532-acre former Crows Landing Naval Auxiliary Air Station with only off-site infrastructure and roadway improvements proposed to support the proposed project.

PROJECT LOCATION

The proposed CLIBP or "project" would be constructed within the boundaries of the former National Aeronautics and Space Administration (NASA) Crows Landing Air Facility. The approximately 1,532-acre project site is located in an unincorporated area of western Stanislaus County that is within 2 miles of Interstate 5 (I-5) and south of the Patterson city limits and its Urban Services Boundary/Sphere of Influence. The project site is bounded by Marshall Road to the north, Fink Road to the south, Bell Road to the east, and Davis Road to the west (Exhibit 1).

The project site is generally surrounded by agricultural land uses, with some rural residential land uses and the community of Crows Landing to the southeast. The Delta-Mendota Canal runs through the project site in a northwest-southeast direction. The California Aqueduct flows in a north-south direction just west of the site and outside of the project boundary. Regional access to the project site would be provided by I-5 and SR 33, with local access provided by West Marshall Road at the site's northern boundary and Ike Crow Road at its eastern boundary. Regional access traveling to and from I-5 would use Fink Road.

PROJECT DESCRIPTION

BACKGROUND

The former Naval Auxiliary Air Station, Crows Landing was commissioned in 1943 and was used intermittently by various branches of the military for more than five decades. In 1994, NASA assumed operation of the facility as part of the U.S. Department of Defense's Base Closure and Realignment process. Public Law (PL) 106-82, enacted by the U.S. Congress in 1999, allowed NASA to convey the approximately 1,532-acre property to Stanislaus County following environmental remediation. The terms of the conveyance allow NASA to "retain the

A6-11
cont.

Comment Set A6, cont.

Stanislaus County Environmental Review Committee

right to use the property for aviation activities, without consideration and on other terms and conditions mutually acceptable to NASA and Stanislaus County” (PL 106-82).

Under a 1992 Memorandum of Understanding between NASA and the U.S. Navy, the U.S. Navy remains responsible for site cleanup activities, with input from the California Department of Toxic Substances Control and the Central Valley Regional Water Quality Control Board. To date, approximately 1,355 acres have been transferred to the County. Of the remaining approximately 176 acres, about 95 acres have undergone soil and groundwater remediation and were determined to be clean in accordance with industrial standards. Groundwater remediation on about 81 acres of the former military site is ongoing.

Unemployment rates throughout the Central Valley, and Stanislaus County in particular, have historically exceeded unemployment rates throughout the State of California and much of the nation. The County envisions the new CLIBP as a regional employment center that capitalizes on regional infrastructure assets, such as I-5, the nearby ports of Stockton and Oakland, synergistic opportunities associated with nearby logistics and industrial sites in the City of Patterson and other locations, and the reuse of former military infrastructure.

The County has considered the reuse of the former Crows Landing military facility for more than a decade, but the economic downturn of 2008 brought many development efforts to a halt. Based on the recent resurgence in the need for industrial sites—and especially the need for sites that can support development parcels greater than 1 million square feet of buildable area—Stanislaus County has determined that the time is ripe for reuse of the former Crows Landing military site. The combination of available land for large parcel development, nearby transportation infrastructure, regional connections to the I-5 corridor and San Francisco Bay area, and an available locally based workforce provide the County and the development community with a unique opportunity for creative and profitable investment.

PROPOSED SITE DEVELOPMENT

The County anticipates that development of the CLIBP at the former Crows Landing military site would require more than 30 years to reach full buildout, and the needs associated with parcel development will continue to evolve. Therefore, the proposed CLIBP does not offer specific parcels for development, but areas that can be sized based on the individual needs of site tenants and developers. The proposed CLIBP Specific Plan, which will be appended to the EIR, will provide objectives, goals, and policies for the approximately 1,532-acre site that will further the County’s vision for the property. The Specific Plan would allow proposed tenants to develop parcels that are suitable for their diverse and unique needs.

PROJECT PHASING

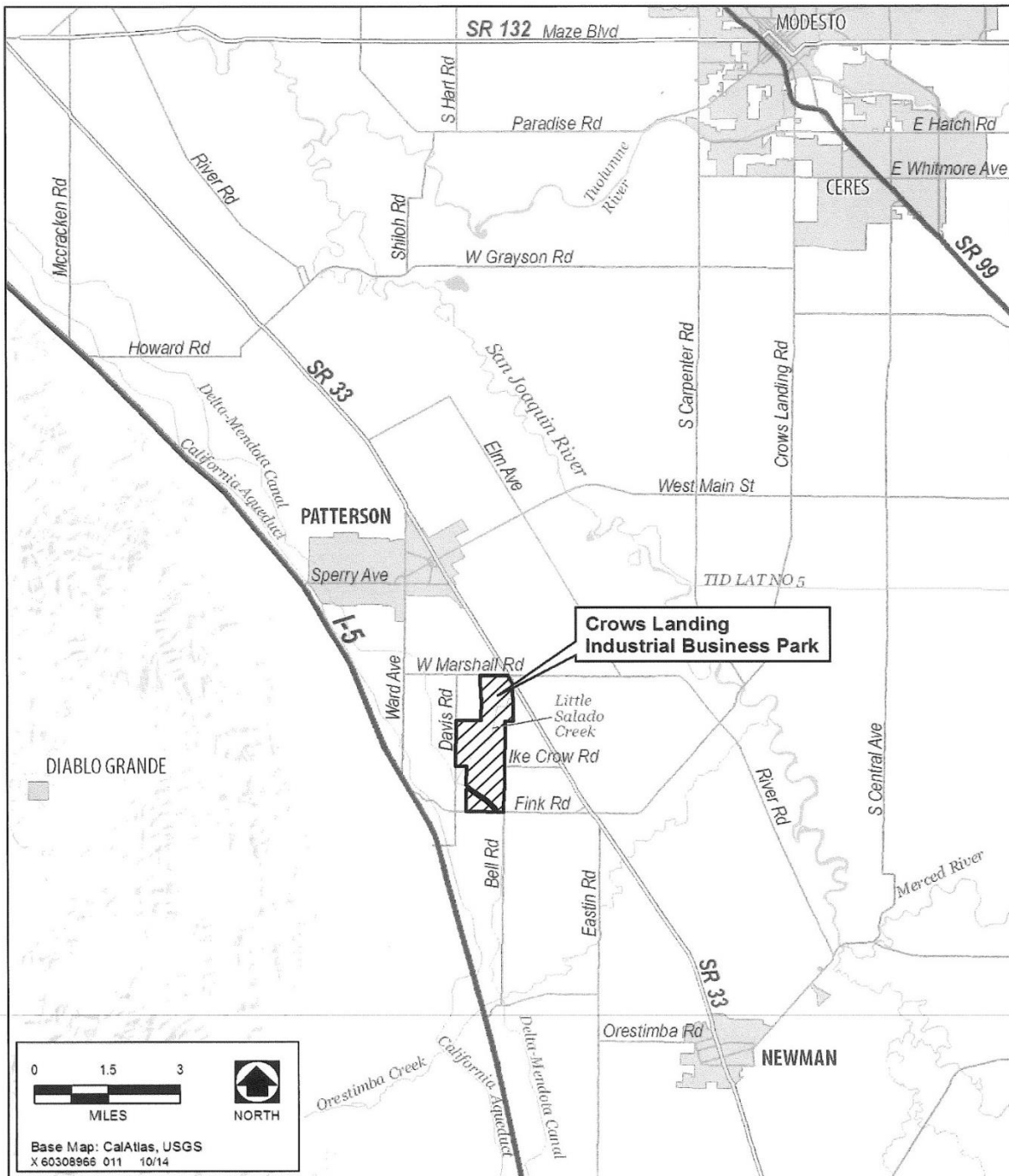
The County assumes that the proposed project would be developed in three, 10-year phases or an overall 30-year timeframe, and it would provide backbone on- and off-site infrastructure and roadway improvements to meet the needs associated with each phase (see Exhibit 2). The three project phases are summarized below.

PHASE 1: INITIAL SITE DEVELOPMENT (2016 TO 2025)

As shown on Exhibit 2, the County anticipates that Phase 1 development (2016 to 2025) would be associated with revitalizing/converting former military Runway 11-29 to a general aviation (GA) airport and promoting the reuse of the SR 33 Corridor and Public Facilities areas northeast of the proposed airport. This phase would include on- and off-site infrastructure and roadway improvements, and public facilities (e.g., pedestrian and bicycle routes, park area, transit)

A6-11
cont.

Comment Set A6, cont.
Stanislaus County Environmental Review Committee



A6-11
cont.

Source: AECOM 2014

Exhibit 1. Regional Location

Crows Landing Industrial Business Park Project – Notice of Preparation
Stanislaus County, California

October 13, 2014
Page 4 of 10

A6-11
cont.



Exhibit 2. Conceptual Land Use Plan

Crows Landing Industrial Business Park Project – Notice of Preparation
Stanislaus County, California

Comment Set A6, cont. Stanislaus County Environmental Review Committee

PHASE 2: ONGOING AIRPORT IMPROVEMENTS AND SR 33 CORRIDOR BUILD OUT (2026 TO 2035)

Additional facilities in the SR 33 Corridor would be developed north of the airport during Phase 2, along with improvements to the airport. Additional infrastructure and roadway improvements would be provided to support anticipated Phase 2 development.

PHASE 3: FINK ROAD AND BELL ROAD CORRIDOR DEVELOPMENT (2036 TO 2045)

The final phase of CLIBP development would occur south of the Crows Landing Airport, in two discrete areas identified as the Fink Road Corridor and the Bell Road Corridor, which are separated by the Delta-Mendota Canal and its associated setbacks. Regional access to these areas would be provided by I-5, with local access provided by the portion of Fink Road west of Bell Road.

While these are anticipated timeframes for each of the Phases, the Specific Plan will provide flexibility for development following the completion of necessary infrastructure and mitigation.

COUNTY DISCRETIONARY ACTIONS

Discretionary actions to be considered by Stanislaus County that are related to the proposed project include, but are not limited to:

- ▶ A General Plan amendment and rezone of the project site to adopt the CLIBP Specific Plan
- ▶ Adoption of the Crows Landing Airport Layout Plan (ALP)
- ▶ Amendment of the Countywide ALUCP to include the proposed Crows Landing Airport

The proposed project will be supported by the EIR analysis, which will address the proposed backbone infrastructure, airport development through 2045 as defined in the ALP, and revisions to the county-wide ALUCP. The EIR analysis will rely upon the data presented in the proposed infrastructure and transportation plans that are being prepared to support land use types, densities, and intensities identified in the Specific Plan. The Specific Plan will identify the types of future projects that would be implemented under a PD land use designation.

The EIR will identify the site-specific environmental opportunities, constraints, and mitigation measures and performance standards that would apply to subsequent site development and provide potential developers with site-specific data to consider or tier from when proposing subsequent projects on the project site.

Following certification of the EIR and adoption of the ALUCP, the County will submit a permit application to the Caltrans Division of Aeronautics to operate a public-use general aviation Airport on the former Crows Land Air Facility and submit the proposed ALUCP revisions to the County's Airport Land Use Commission.

PROBABLE ENVIRONMENTAL EFFECTS

Stanislaus County has reviewed the proposed project and determined an EIR will be prepared to address all environmental issue areas listed in Appendix G of the State CEQA Guidelines. Accordingly, the environmental issues described below will be evaluated in the EIR. In addition to anticipated environmental issues, information regarding the probable environmental effects of the proposed project is provided below as required by State CEQA Guidelines CCR Section 15082(a)(1)(C).

The EIR analysis will focus on examining the potential environmental impacts associated with the proposed project and identifying the measures that can be implemented to minimize or avoid such impacts. The EIR will also evaluate growth-inducing and cumulative effects, when considered in conjunction with other related past, present, and reasonably foreseeable future projects.

Comment Set A6, cont.

Stanislaus County Environmental Review Committee

On the basis of preliminary evaluations, Stanislaus County has determined that the proposed project could have the following potentially significant environmentally significant effects:

A6-11
cont.

Aesthetics. The EIR will describe the potential visibility of the proposed project from surrounding land uses and view sheds. It also will describe the changes in visual character and potential effect on scenic resources that would result from the conversion of the project site from a former military facility and agricultural land to industrial park development. An assessment of the proposed project's lighting and potential glare will be provided.

Agriculture Resources. The EIR will evaluate the project-related conversion of agricultural land to other uses and will identify any indirect impacts on surrounding agricultural lands, such as potential land use conflicts and the proposed project's potential to induce future conversion of surrounding agricultural land to other uses. The EIR will address the proposed project's contribution to cumulative loss of agricultural lands in the region.

Air Quality. The EIR will describe regional and local air quality in the project vicinity and evaluate the potential air quality effects of the proposed project during construction (temporary, short-term) and operation (long-term). The proposed project's estimate air emissions will be modeled and compared to emission thresholds of the San Joaquin Valley Air Pollution Control District. The potential effects of proposed aviation uses will be considered using appropriate models and criteria set forth by the Federal Aviation Administration (FAA). The EIR will evaluate whether the proposed project could cause a cumulatively considerable net change in emissions for any criterion air pollutant for which the project region is in non-attainment status. The EIR will also address exposure to toxic air emissions, and will evaluate exposure to potential sources of odor.

Biological Resources. The EIR will describe the existing biological resources at the project site, including Little Salado Creek, and will evaluate the proposed project's effects on those biological resources. The EIR will also address biological resource effects of proposed on- and off-site infrastructure and roadway improvements.

Cultural and Paleontological Resources. The EIR will include a cultural and paleontological resource impact assessment for the proposed project. The EIR will describe the existing cultural and paleontological resources on the project site and affected off-site areas and will evaluate the proposed project's impacts on these resources, including the potential to affect potential undiscovered resources. The EIR will also include a Native American Heritage Commission (NAHC) search of the Sacred Lands File and consultation with the list of suitable tribal representatives and individuals that may have an interest in the proposed project, as provided by NAHC.

Geology, Soils, and Mineral Resources. The EIR will evaluate seismic conditions in the local area, the presence of existing fault lines and effects on development, the potential for erosion of site soils, soil stability, and expansive characteristics of site soils, and the potential loss of availability of any economically valuable mineral deposits.

Greenhouse Gas Emissions. The EIR will evaluate the proposed project's contribution to global climate change by calculating the existing average and 1990 California emission levels of carbon dioxide equivalent (CO₂e) as referenced in Assembly Bill 32 (the California Climate Solutions Act of 2006), and other indicators and will compare them against those associated with implementation of the proposed project. The focus of the chapter will be a calculation of the proposed project's generation of greenhouse gases and an assessment of whether the net change in such will constitute a substantial contribution to the significant adverse cumulative impact of global climate change.

Hazards and Hazardous Materials. The EIR will summarize the results of hazardous materials assessments performed for the former military facility and will evaluate the operational characteristics of the proposed project to determine potential impacts related to use of hazardous material and emergency response plans. The EIR will also address safety issues specifically related to the proposed general aviation airport and industrial operations. The EIR will address the potential that a significant hazard to the public may be created from proposed wastewater treatment solutions and through the transport, use, or disposal of hazardous materials, as well as reasonably foreseeable upset or accident conditions involving the release of hazardous materials into the

Comment Set A6, cont. Stanislaus County Environmental Review Committee

environment. Seismic hazards will be addressed as part of the geology evaluation. Flooding hazards will be addressed as part of the hydrology evaluation.

Hydrology, Drainage, and Water Quality. The EIR will evaluate the proposed project's effect on hydrology, drainage, and water quality characteristics of the local aquifer, including water supply, groundwater recharge, alteration of drainage patterns, erosion, stormwater discharges, wastewater management, and flooding.

Land Use and Planning. The EIR will evaluate the proposed changes to on-site conditions in terms of consistency with all adopted applicable plans, such as the Stanislaus County General Plan, the Stanislaus County ALUCP, the Regional Transportation Plan, and other relevant adopted plans.

Noise. The EIR will describe the noise effects associated with the construction and operation of the proposed project (including traffic and airport operations) and will compare these effects to applicable noise thresholds. It will also address the noise/land use compatibility of the proposed project with existing and future expected noise levels, including noise generated by use of the proposed general aviation airport and traffic noise generated at nearby roadways and freeways. The EIR will also include a vibration analysis to determine the compatibility of proposed on-site land uses.

Population, Employment, and Housing. The EIR will present existing population, housing, and employment figures for Stanislaus County and the projected changes in these variables as a result of overall regional development. The analysis will include a review of adopted County goals and policies; potential changes in population, housing, and employment characteristics resulting from the proposed project; and the potential for secondary environmental impacts from those changes. The EIR will address the proposed project's effect on regional jobs/housing ratios and population demographics.

Public Services. The EIR will evaluate the potential for adverse physical effects on the physical environment related to construction of new governmental facilities required to provide public services such as fire and law enforcement protection, schools, and solid waste, and the proposed project's effect on the availability of public resources to communities in the project's vicinity.

Recreation. The EIR will analyze the proposed project's potential to increase the use of or substantially degrade existing local and regional parks. It will also evaluate the proposed project's consistency with applicable adopted plans and policies for parks and open space.

Traffic and Circulation. The EIR will evaluate the proposed project's impacts on local and regional transportation facilities, including appropriate freeway segments and ramps. The evaluation will be based on a transportation analysis that will evaluate local intersections, roadway segments, merge/diverge/weave, project-related vehicle trips, proposed site circulation and access, local transit operations, and the surrounding roadway network. The EIR will identify triggers for transportation improvements. The traffic and circulation section also will analyze effects on public transit, as well as public transit needs and alternative modes of transportation.

Utilities and Service Systems. The EIR will evaluate the potable water, recycled water, source water for groundwater recharge (if applicable), wastewater treatment/conveyance/discharge systems and stormwater conveyance/treatment/discharge systems proposed as part of the project. The EIR will analyze the potential impacts resulting from provision of new on-site utilities, including water treatment and conveyance, wastewater treatment/conveyance/discharge systems, stormwater conveyance/treatment/discharge systems, electricity and natural gas services, and communications.

ALTERNATIVES

Consistent with the requirements of CCR Section 15126.6, the EIR will examine a range of reasonable alternatives to the proposed project. The alternatives must be feasible to attain most of the objectives of the proposed project while avoiding or substantially lessening at least one of the significant environmental effects of

A6-11
cont.

Comment Set A6, cont.

Stanislaus County Environmental Review Committee

the proposed project. One of the purposes of the NOP is to solicit input from interested agencies and the public regarding potential alternatives to the proposed project. Therefore, the alternative examined in the EIR will include a project development alternative that considers input from the public scoping process, as well as a No Project Alternative as required by State CEQA Guidelines CCR Section 15126.6.

**A6-11
cont.**

ENVIRONMENTAL REVIEW AND APPROVAL PROCESS

The County plans to prepare a Draft EIR, which will involve additional planning project analysis, and to release the Draft EIR for public and agency comment in the spring of 2015. Following the release of the Draft EIR, the County will hold public meeting(s) during the 45-day comment period. This will allow the public and interested agencies to learn more about the significant environmental effects of the proposed project. The County will receive comments on the Draft EIR from agencies and the public during the 45-day comment period. The County will then provide written responses to comments on environmental issues, and text changes to the Draft EIR as necessary, in the Final EIR. The Final EIR will be published, and the County Board of Supervisors will consider the Final EIR (including the Draft EIR and responses to comments) for certification prior to approving the proposed project. This matter will likely be presented to the Board in fall 2015.

Comment Set A7 San Joaquin County

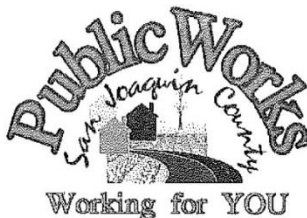


MICHAEL SELLING
DEPUTY DIRECTOR

FRITZ BUCHMAN
DEPUTY DIRECTOR

JIM STONE
DEPUTY DIRECTOR

ROGER JANES
BUSINESS ADMINISTRATOR



P. O. BOX 1810 - 1810 E. HAZELTON AVENUE
STOCKTON, CALIFORNIA 95201
(209) 468-3000 FAX (209) 468-2999
www.sjgov.org/pubworks

August 28, 2015

Mr. Donald Lash
NEPA Document Manager
Western Area Power Administration
Sierra Nevada Region
114 Parkshore Drive
Folsom, CA 95630

SUBJECT: DRAFT ENVIRONMENTAL IMPACT STATEMENT/ENVIRONMENTAL IMPACT
REPORT FOR THE SAN LUIS TRANSMISSION PROJECT

Dear Mr. Lash:

The San Joaquin County Department of Public Works has reviewed the Draft Environmental Impact Statement/Environmental Impact Report for the above referenced project and has no comments at this time. However, the County does request to be included on the circulation list for any additional project documents.

A7-1

Thank you for the opportunity to review and comment. Should you have questions please contact me at atmcginnis@sjgov.org or (209) 468-3085.

Sincerely,

A handwritten signature in cursive script, reading "Ashlen McGinnis".

ASHLEN MCGINNIS
Environmental Coordinator

AM:as

c: Firoz Vohra, Senior Engineer

Comment Set A8
U.S. Department of the Interior



United States Department of the Interior

OFFICE OF THE SECRETARY
Office of Environmental Policy and Compliance
Pacific Southwest Region
333 Bush Street, Suite 515
San Francisco, CA 94104

IN REPLY REFER TO:
(ER 15/0406)

Filed Electronically

31 August 2015

Attn: Donald Lash
NEPA Document Manager
114 Parkshore Drive
Folsom, CA 95630

Subject: Review of the Draft Environmental Impact Statements (DEIS) Department of Energy (DOE) Western Area Power Administration (WAPA) for the San Luis Transmission Project, Alameda, Merced, San Joaquin and Stanislaus counties, California

Dear Mr. Lash:

The Department of the Interior has received and reviewed the subject document and has no comments to offer.

Thank you for the opportunity to review this project.

Sincerely,

Patricia Sanderson Port
Regional Environmental Officer

cc: OEPC Staff Contact;; Lisa.Treichel@ios.doi.gov

A8-1

Comment Set A9

U.S. Environmental Protection Agency



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

AUG 31 2015

Mr. Donald Lash
NEPA Document Manager
Western Area Power Administration
114 Parkshore Drive, Folsom, California 95630

Subject: Draft Environmental Impact Statement for the San Luis Transmission Project, Alameda, San Joaquin, Stanislaus, and Merced Counties, California (CEQ # 20150194)

Dear Mr. Lash:

The U.S. Environmental Protection Agency has reviewed the Draft EIS for the San Luis Transmission Project pursuant to the National Environmental Policy Act, Council on Environmental Quality regulations (40 CFR Parts 1500-1508), and our NEPA review authority under § 309 of the Clean Air Act. Previously, EPA provided formal scoping comments for the proposed project, including detailed recommendations regarding purpose and need, range of alternatives, air quality, biological and aquatic resources, and other resource areas of concern (comments submitted January 15, 2014).

A9-1
cont.

The Western Area Power Administration has proposed to construct, maintain, and operate a new transmission line and associated facilities in order to deliver "durable, long-term, cost-certain and efficient" power from federal power generation sites to the major pumping stations of the Bureau of Reclamation's San Luis Unit (SLU), which delivers water to Reclamation and the federal water service contractors. EPA recognizes the need for continued operation of the SLU facilities upon expiration of the existing transmission contract with Pacific Gas and Electric. We appreciate that Western's objectives include minimizing environmental effects by maximizing the use of existing transmission corridors and rights of way, and appropriate siting of infrastructure. Nevertheless, we are concerned about the potential impacts to air quality and sensitive aquatic resources that could result from the construction of 95 miles of new transmission lines and associated infrastructure. Such impacts should be avoided to the extent possible in order to fully protect the environment and to demonstrate compliance with Section 404 of the Clean Water Act and EPA's general conformity regulations.

A9-2

Given the availability of existing transmission infrastructure and capacity, EPA recommends that any decision to build new transmission lines be supported by additional clarification, in the Final EIS, of the costs and benefits associated with the no action and action alternatives. In addition, we are concerned that the narrowly defined objectives for the project may have precluded consideration of whether other renewable sources of power may be available that could meet Reclamation's needs at a comparable cost with less environmental impact. Within the context of the no action alternative, we recommend consideration of whether opportunities may exist for Reclamation to obtain electricity from new or existing solar or wind power facilities in the vicinity of the SLU, and whether doing so could reduce the power needed from the existing PG&E transmission line and the costs related to the CAISO Tariff.

A9-3

Based on our review, we have rated all alternatives in the Draft EIS as *Environmental Concerns – Insufficient Information* (EC-2). Please see the enclosed "Summary of EPA Rating Definitions." Our

A9-4

Comment Set A9, cont.
U.S. Environmental Protection Agency

detailed comments on the topics mentioned above, as well as potential impacts of climate change on the study area, are enclosed.

**A9-4
cont.**

Thank you for the opportunity to review this Draft EIS. When the Final EIS is published, please send one hard copy to us at the address above (Mail Code: ENF-4-2). If you have any questions, please contact me at 415-972-3521, or contact Tom Plenys, the lead reviewer for this project. Tom can be reached at 415-972-3238 or plenys.thomas@epa.gov.

Sincerely,

A handwritten signature in black ink, appearing to read 'Kathleen Martyn Goforth', written over a horizontal line.

Kathleen Martyn Goforth
Manager, Environmental Review Section

Enclosures: Summary of EPA Rating System
EPA's Detailed Comments

Comment Set A9, cont. U.S. Environmental Protection Agency

SUMMARY OF EPA RATING DEFINITIONS*

This rating system was developed as a means to summarize the U.S. Environmental Protection Agency's (EPA) level of concern with a proposed action. The ratings are a combination of alphabetical categories for evaluation of the environmental impacts of the proposal and numerical categories for evaluation of the adequacy of the Environmental Impact Statement (EIS).

ENVIRONMENTAL IMPACT OF THE ACTION

"LO" (Lack of Objections)

The EPA review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

"EC" (Environmental Concerns)

The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impact. EPA would like to work with the lead agency to reduce these impacts.

"EO" (Environmental Objections)

The EPA review has identified significant environmental impacts that should be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

"EU" (Environmentally Unsatisfactory)

The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potentially unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the Council on Environmental Quality (CEQ).

ADEQUACY OF THE IMPACT STATEMENT

"Category 1" (Adequate)

EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis or data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

"Category 2" (Insufficient Information)

The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analysed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses, or discussion should be included in the final EIS.

"Category 3" (Inadequate)

EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analysed in the draft EIS, which should be analysed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the NEPA and/or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

*From EPA Manual 1640, Policy and Procedures for the Review of Federal Actions Impacting the Environment.

Comment Set A9, cont. U.S. Environmental Protection Agency

U.S. ENVIRONMENTAL PROTECTION AGENCY'S DETAILED COMMENTS ON THE DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR THE SAN LUIS TRANSMISSION PROJECT, ALAMEDA, SAN JOAQUIN, STANISLAUS, AND MERCED COUNTIES, CALIFORNIA, AUGUST 31, 2015

Air Quality – General Conformity

The general conformity regulations provide a step-by-step process, which begins with an applicability analysis. That is, before any approval for a federal action can be provided, the regulating federal agency must evaluate whether, on a pollutant-by-pollutant basis, a general conformity determination is required. If the general conformity regulations are found to apply to the federal action, the regulating federal agency must next conduct a conformity evaluation, issue a draft determination for public review, and then publish the final determination.

The discussion and analysis in the Draft EIS do not demonstrate compliance with EPA's general conformity regulations (40 CFR 93.150-165). The Draft EIS states "*emissions of NO_x and PM₁₀, but not PM_{2.5} or VOC, during construction could exceed San Joaquin Valley Air Pollution Control District significance thresholds and EPA's General Conformity applicability rate for NO_x*" (p. 4-16). The Draft EIS further states "*Western anticipates that overlapping construction activities or phases could be managed to ensure that the NO_x, PM₁₀, PM_{2.5}, and VOC emissions would be less than the Bay Area Air Quality Management District and SJVAPCD significance thresholds and EPA's General Conformity applicability rates. However, quantification of actual construction emissions will depend on final engineering that is not available at this time*" (p. 4-16).

Recommendations:

Include in the Final EIS one of the following to address general conformity compliance:

- A revised emissions estimate and construction schedule, if necessary, to demonstrate that the proposed project would not exceed the general conformity de minimis thresholds;
- A draft general conformity determination; or
- A commitment to prepare a general conformity determination (following the public notice requirements and timeframes of 40 CFR 93.156). EPA recommends that, upon completion of the general conformity determination, the Record of Decision identify any measures required to demonstrate conformity, such as obtaining offsets from an air district.

If a general conformity determination is required or will be prepared in the future, the EPA recommends close coordination with the SJVAPCD and BAAQMD. In addition to working with regional air quality agencies, Western is welcome to consult with the EPA prior to finalizing the general conformity determination. To consult with the EPA, please contact Tom Kelly in our Air Division at (415) 972-3856, or by email at Kelly.Thomas@epa.gov.

Air Quality – Mitigation

Given the nonattainment status of the San Joaquin Valley under SJVAPCD's and BAAQMD's jurisdiction, the short- and long-term adverse effects identified and the numerous projects proposed in the project area, all feasible measures should be implemented to reduce and mitigate air quality impacts to the greatest extent possible. We encourage Western to identify up-to-date mitigation measures, incorporate the

A9-5

A9-6

Comment Set A9, cont. U.S. Environmental Protection Agency

use of the best available technology and emission controls, and ensure consistent implementation of these measures for all future activities.

A9-6
cont.

Recommendations:

Include, in the Final EIS, an updated list of all mitigation measures. In addition to measures necessary to meet all applicable local, state, and federal requirements, we recommend that the following measures be included:

Fugitive Dust Source Controls:

- Stabilize open storage piles and disturbed areas by covering and/or applying water or chemical/organic dust palliative where appropriate. This applies to both inactive and active sites, during workdays, weekends, holidays, and windy conditions.
- Install wind fencing and phase grading operations where appropriate, and operate water trucks for stabilization of surfaces under windy conditions.
- When hauling material and operating non-earthmoving equipment, prevent spillage and limit speeds to 15 miles per hour. Limit speed of earth-moving equipment to 10 mph.

A9-7

Mobile and Stationary Source Controls:

- Minimize use, trips, and unnecessary idling of heavy equipment.
- Maintain and tune engines per manufacturer's specifications to perform at EPA certification levels, where applicable, and to perform at verified standards applicable to retrofit technologies.
- Employ periodic, unscheduled inspections to limit unnecessary idling and to ensure that construction equipment is properly maintained, tuned, and modified consistent with established specifications. The California Air Resources Board has a number of mobile source anti-idling requirements which should be employed (<http://www.arb.ca.gov/msprog/truck-idling/truck-idling.htm>).
- Prohibit any tampering with engines and require continuing adherence to manufacturer's recommendations.
- In general, commit to the best available emissions control technologies for project equipment:
 - *On-Highway Vehicles* - On-highway vehicles used for future covered activities should meet or exceed the US EPA exhaust emissions standards for model year 2010 and newer heavy-duty on-highway compression-ignition engines (e.g., long-haul trucks, refuse haulers, etc.).¹
 - *Nonroad Vehicles & Equipment* - Nonroad vehicles & equipment used for all covered activities should meet or exceed the US EPA Tier 4 exhaust emissions standards for heavy-duty nonroad compression-ignition engines (e.g., construction equipment, nonroad trucks, etc.).²
 - *Low Emission Equipment Exemptions* - The equipment specifications outlined above should be met unless: 1) a piece of specialized equipment is not available for purchase or lease within the United States; or 2) the relevant project contractor has been awarded funds to retrofit existing equipment, or purchase/lease new equipment, but the funds are not yet available.

A9-8

¹ <http://www.epa.gov/otaq/standards/heavy-duty/hdci-exhaust.htm>

² <http://www.epa.gov/otaq/standards/nonroad/nonroadci.htm>

Comment Set A9, cont. U.S. Environmental Protection Agency

- *Advanced Technology Demonstration & Deployment* – Western is encouraged to demonstrate and deploy heavy-duty technologies that exceed the latest US EPA emission performance standards for the equipment categories that are relevant for the covered activities (e.g., plug-in hybrid-electric vehicles - PHEVs, battery-electric vehicles - BEVs, fuel cell electric vehicles - FCEVs, etc.).

A9-8
cont.

Administrative controls:

- Specify the means by which Western would minimize impacts to sensitive receptors, such as children, the elderly, and the infirm. For example, locate construction equipment and staging zones away from sensitive receptors and fresh air intakes to buildings and air conditioners.
- Prepare an inventory of all equipment prior to construction.
- Develop a construction traffic and parking management plan that minimizes traffic interference and maintains traffic flow.
- Identify where implementation of mitigation measures is rejected based on economic infeasibility.

A9-9

Update, as necessary, the Final EIS to reflect the latest State and federal attainment designations for air quality.

A9-10

Update, in the Final EIS, the air quality analysis to reflect additional air quality improvements that would result from adopting specific air quality measures.

A9-11

Describe, in the Final EIS, how these mitigation measures would be made an enforceable part of future covered activities. We recommend implementation of applicable mitigation measures prior to or, at a minimum, concurrently with the commencement of construction of all future activities.

A9-12

Waters of the United States and Section 404(b)(1) Guidelines

A9-13

The purpose of the Clean Water Act is to restore and maintain the chemical, physical, and biological integrity of waters of the U.S. (WUS). These goals are achieved, in part, by prohibiting discharges of dredged or fill material that would result in avoidable or significant adverse impacts on the aquatic environment. Pursuant to Section 404 of the CWA, discharge of dredged or fill material to WUS requires a permit issued by the Army Corps of Engineers. If a permit is required, the EPA will review the project for compliance with the Federal Guidelines for Specification of Disposal Sites for Dredged or Fill Materials (40 CFR 230) (Guidelines), promulgated pursuant to Section 404(b)(1) of the CWA. The Guidelines presume that practicable alternatives to discharges in special aquatic sites exist for non-water dependent projects, unless clearly demonstrated otherwise.

The EPA is concerned about the potential adverse impacts to aquatic resources that could result from the proposed project. The Draft EIS identifies 214.5 acres of potentially jurisdictional wetlands and other WUS within the study area (p. 4-52). Table 4.16-1 indicates that 213 named and unnamed streams and canals may be crossed. The Draft EIS states that, because the exact locations of project features are not yet known, the estimates of temporary and permanent impacts to vegetation and landform type were developed by calculating the proportion of the total acres in each segment corridor that would be subject to disturbance, and applying that proportion to the amount of each landform type in the corridor (p. 4-45). Based on this calculation method, Table 4.4-1 estimates 16.74 acres of sensitive creeks, waters and

Comment Set A9, cont.

U.S. Environmental Protection Agency

wetlands could be temporarily or permanently disturbed, including over 3 acres of permanent impacts to vernal pools. A formal jurisdictional delineation of the full extent of WUS on the project site has not yet been completed, nor verified by the Corps.

A9-13
cont.

We note that the corridor alternatives identified as “environmentally preferred” within the San Luis and Central segments would have the most impacts to ephemeral creeks, freshwater marshes, vernal pools and jurisdictional resources (p. 2-29 and 30). Given the scale and nature of the action, a complete planning level assessment of aquatic resources would help further differentiate between alternatives and refine potential acreage impacts. Such an evaluation includes utilization of existing water resource data contained in not only the National Hydrography Dataset, but also the National Wetland Inventory, USGS topographic maps and high resolution digital photography, as well as necessary field checking of the alternatives. Once the environmentally preferable alternative is identified, a jurisdictional delineation should be conducted prior to final design of the selected transmission line alignment. With a jurisdictional delineation, the applicant can use the design flexibility inherent in transmission line design (e.g., adjust tower placement and access roads) to demonstrate the alignment is the Least Environmentally Damaging Practicable Alternative (LEDPA), in compliance with the Guidelines.

A9-14

Recommendations:

Discuss, in the Final EIS, the process to be used to demonstrate compliance with the CWA Section 404 (b)(1) Guidelines.

A9-15

Complete at least a planning level assessment for potential impacts to WUS prior to issuance of the Final EIS. Include, in the Final EIS, estimated acreage impacts to WUS based on the planning level assessment for each alternative within each segment. Modify the environmentally preferable alternative selected for each segment, as necessary, to ensure that the selected alignments would represent the LEDPA.

A9-16

Include, in the Final EIS, additional measures to minimize impacts to aquatic resources, such as reducing the width of access roads, constructing bridges over WUS and increasing the buffer widths to minimize indirect impacts to aquatic resources.

A9-17

In the Biological Resources chapter, the Draft EIS incorrectly states that “all wetlands are subject to federal and state regulations”. The Draft EIS also incorrectly states that there is no federal jurisdiction over wetlands that are hydrologically isolated (p. 3-34 & 35).

A9-18

Recommendations:

Clarify, in the Final EIS, that waters, including wetlands, adjacent to a jurisdictional tributary, and wetlands and other waters with a significant nexus to a Traditional Navigable Water (TNW) are regulated. This applies to vernal pools, swales and seasonal wetlands. Note that the Clean Water Rule: Definition of “Waters of the United States” went into effect on August 28, 2015.³

Clarify, in the Final EIS, that hydrologically isolated wetlands are regulated if they have a significant biological or chemical nexus to a TNW.

³ Clean Water Rule: Definition of “Waters of the United States”, Final Rule, US Environmental Protection Agency, 40 CFR Parts 110, 112, 116, et al.

Comment Set A9, cont. U.S. Environmental Protection Agency

Purpose and Need

Power Requirements and Costs

The Draft EIS states that the existing transmission contract with PG&E expires on March 31, 2016 and PG&E has stated it will not renew the existing contract. The estimated cost to Reclamation of taking service under the California Independent System Operator Tariff is expected to range from \$5.3 million to \$8.8 million per year (p. 1-2). Western is evaluating Reclamation's request for transmission service arrangements, which could include the construction of new federal transmission lines at a construction cost of \$400 million. Reclamation has determined that constructing, operating and maintaining a new transmission line outside of the CAISO grid over a 50-year period would be more cost effective than paying the CAISO Tariff charges over the same period.

A9-19

The Draft EIS indicates that, if Western constructs its own transmission line, Reclamation's operating costs would be paid for by its water service contractors (p. ES-2). The Draft EIS does not include an estimate of those annual operating costs, nor does it specify whether the water service contractors would pay the same or an additional amount for operations, should Reclamation continue to use the existing PG&E transmission line as part of the CAISO grid. The Draft EIS is also silent on whether or not the contractors would pay any of the costs of constructing the proposed new transmission line.

Recommendations:

Include, in the Final EIS, the estimated annual payment from federal water service contractors to operate the proposed project.

A9-20

Clarify, in the Final EIS, whether and, if so, how much, water service contractors would pay for operation of the existing transmission network if Western decided not to construct a new transmission line.

A9-21

Include, in the Final EIS, 1) the power requirements to operate the SLU, 2) the current available capacity of the existing PG&E transmission line; and 3) the estimated capacity of the PG&E transmission line in future years.

A9-22

Incorporate a tabulated cost comparison, including any key assumptions, to support the conclusion that constructing a new transmission line would be "substantially below the anticipated costs that Reclamation would incur under the CAISO Tariff over the same 50 year period" (p. 1-3). Include the source and cost of the power to be utilized during the 5 year period between the expiration of the existing PG&E contract and when the proposed project would be operational (p. 2-5). Clarify whether or not the contractors would pay any of the construction costs.

A9-23

Alternative Sources of Power

The project objectives specify "efficient transmission delivery of CVP (Central Valley Project) power from federal power generation sites" (p. 1-3). EPA is concerned that this constraint, while relevant to Western's mission, may have unduly precluded consideration of whether other power sources with the potential to meet Reclamation's need to be able to "pump, store, convey, and deliver federal water via the SLU at a reasonable cost" may be available. The Draft EIS assumes that, under the no action alternative, Reclamation would continue to use PG&E's transmission line and pay the associated costs pursuant to the CAISO Tariff. EPA notes that several solar energy facilities are located, or under construction, in close

A9-24

Comment Set A9, cont.

U.S. Environmental Protection Agency

proximity to the SLU, including the Wright Solar Park (200 megawatt solar photovoltaic) and the Quinto Solar Project (110 MW PV), both of which have undergone environmental review (Table 4.17-1), as well as the San Luis Renewables, LLC Solar Generation Project. The Draft EIS does not discuss whether these facilities, with or without an energy storage component, may be available to meet the energy requirements of the SLU, nor whether the cost effectiveness and feasibility of the no action alternative would change if Reclamation were to secure such a local source of renewable power to support some or all of the SLU's power needs.

A9-24
cont.

The passage of California's A.B. 2514, which mandates 1.325 gigawatts of new energy storage by California's three large investor-owned utilities by 2020, has resulted in contracts being secured for hundreds of megawatts of new energy storage. The "road map" for smoothly deploying energy storage into California's grid, which was detailed in a report released in January 2015 by CAISO, the California Energy Commission, and the California Public Utilities Commission, should make it easier to use batteries and other devices to store renewable power and release it at more opportune times, thereby enabling greater amounts of energy from distributed solar systems to be fed into the grid.

A9-25

Recommendations:

Consider whether obtaining power from nearby solar or wind energy generating facilities could reduce or eliminate the need for power from the existing PG&E transmission line or for new transmission lines and associated infrastructure. Discuss, in the Final EIS, the extent to which utilizing or constructing renewable energy facilities, with or without an energy storage component, to provide the power necessary to operate the SLU unit would alter the cost effectiveness and feasibility of the no action alternative.

A9-26

Discuss whether local sources of power could reduce, or eliminate, the need to connect to the Tracy or Dos Amigos substations and, if so, how the cost of that approach would compare to that of the proposed project or the no action alternative.

A9-27

Clarify, in the Final EIS, the rationale for including new transmission lines north to Tracy as well as south to Dos Amigos, and whether Reclamation anticipates utilizing power from both substations.

A9-28

Discuss, in the Final EIS, to what degree Reclamation could secure renewable sources of power from the Tracy substations, if the existing PG&E line is utilized. Under that scenario, EPA would encourage Reclamation to commit to working with the California Public Utilities Commission and the CAISO to maximize the transmission of energy from wind, solar or other renewable sources to support the power needs of the SLU.

A9-29

Climate Change

We note the reference to the Council on Environmental Quality's December 18, 2014⁴ revised draft guidance that describes how federal departments and agencies should consider the effects of greenhouse gas emissions and climate change in their NEPA reviews (p. 3-15). The revised draft guidance supersedes the draft greenhouse gas and climate change guidance released by CEQ in February 2010. This guidance

A9-30

⁴ The draft guidance is available in full

at: http://www.whitehouse.gov/sites/default/files/docs/nepa_revised_draft_ghg_guidance_searchable.pdf

Comment Set A9, cont.

U.S. Environmental Protection Agency

explains that agencies should consider both the potential effects of a proposed action on climate change, as indicated by its estimated greenhouse gas emissions, and the implications of climate change for the environmental effects of a proposed action.

A9-30
cont.

The EPA commends Western for including estimates of greenhouse gas emissions from the project. In disclosing the potential impacts of the proposed project and alternatives, consideration should be given to whether and to what extent the impacts, across all resources, may be exacerbated by expected climate change in the project area.

Recommendations:

Include, in the Final EIS, a summary discussion of climate change and ongoing and reasonably foreseeable climate change impacts relevant to the project, based on U.S. Global Change Research Program⁵ assessments, to assist with identification of potential project impacts that may be exacerbated by climate change and to inform consideration of measures to adapt to climate change impacts.

A9-31

Considering that the project is planned to be in operation for up to 50 years, provide a more robust discussion of the anticipated effects of climate change upon overall project goals and objectives. Compare the action alternatives with regard to their vulnerability to such effects and indicate what actions, if any, could be taken to minimize these effects where they are found to represent a risk to any goals or stipulations.

A9-32

Consider, in the Final EIS, practicable changes to the proposal to make it more resilient to anticipated climate change, as appropriate.⁶

A9-33

⁵ <http://www.globalchange.gov/>

⁶ See footnotes 52 and 53 of the CEQ's December 2014 revised draft guidance for additional information and references on climate change adaptation and resiliency.

Comment Set A10

California Department of Water Resources

STATE OF CALIFORNIA – CALIFORNIA NATURAL RESOURCES AGENCY

EDMUND G. BROWN JR., Governor

DEPARTMENT OF WATER RESOURCES

1416 NINTH STREET, P.O. BOX 942836
SACRAMENTO, CA 94236-0001
(916) 653-5791



August 31, 2015

Western Area Power Administration
Donald Lash, NEPA Document Manager
114 Parkshore Drive
Folsom, CA 95630

RE: Draft EIS/EIR for San Luis Transmission Project. DOE/EIS-0496
SCH#2013112059

Dear Mr. Nash:

Thank you for the opportunity to review and comment on the Draft EIS/EIR for the San Luis Transmission Project (SLTP). The proposed San Luis Transmission Project comprises 95 miles of new transmission lines within easements ranging from 125 to 250 feet wide on or adjacent to the California Department of Water Resources' (DWR) State Water Project (SWP) facilities through Alameda, San Joaquin, Stanislaus, and Merced Counties along the foothills of the Diablo Range in the western San Joaquin Valley, California. The purpose of the new lines is to reduce costs associated with delivery of federal power to serve the federal share of the pumpload at the San Luis facilities, as well as serve another potential, as-yet unidentified transmission customer. Pursuant to federal law and the DWR-Bureau Joint Use Facilities Agreement, DWR has partnered with the Bureau of Reclamation since before 1960 on the construction, management, operation and maintenance of the Joint use Facilities, including managing many aspects of transmission and use of federal power for the Joint Use facilities.

For the reasons explained below, DWR should be identified in the EIS/EIR as a cooperating agency under NEPA and a responsible agency under CEQA. The purpose of these comments is to provide you with the information DWR believes is necessary to enable it to rely on the EIR in making the determinations it will need to make when considering whether to approve the project.

Background

DWR operates the Joint Use Facilities (JUF) as provided for in the 1961 Agreement Between the United States and the Department of Water Resources of the State of California for the Construction and Operation of the Joint-Use Facilities of the San Luis Unit (Agreement). Any changes to the Agreement, including changes to the roles and responsibilities of the two signatories, must be approved by both DWR and the USBR.

A10-1

A10-2

Comment Set A10, cont.
California Department of Water Resources

Western Area Power Administration
August 31, 2015
Page two

Under the Agreement, DWR assumed responsibility for the care, operation, and maintenance of the facilities, and has performed that role since initiation of operations. This role includes responsibility for transmission management and interconnection. DWR and WAPA entered into a Scheduling Coordinator Agreement to address market-based changes which impacted DWR's ability to recover costs associated with management of federal power at San Luis. In addition, as operator of the facilities DWR is responsible for transmission interconnections, and has interconnected Dos Amigos and San Luis to Pacific Gas and Electric's (PG&E) transmission system within the California Independent System Operator (CAISO) Balancing Authority (BA) under FERC-approved interconnection agreements. Under these agreements, adequate capacity has been made available to the JUF. WAPA will necessarily need to consult with CDWR on changing the transmission to serve Dos Amigos and San Luis from the CAISO's Balancing Area Authority to the WAPA Balancing Area Authority. Other technical and regulatory arrangements will also undoubtedly require coordination between DWR as operator and the project proponents. DWR is committed to coordinating with you in order to accomplish the necessary changes in a manner that assists you in achieving your goals while not imposing additional costs or burdens on DWR and its efficient and cost-effective management of the State Water Project.

A10-2
cont.

Recent communications have revealed different perspectives between DWR and WAPA on our respective roles at San Luis. DWR is pleased with the progress being made in on-going talks among the USBR, WAPA, and DWR to address these issues. It is hoped that with such resolution, clarity can be achieved in defining WAPA's role at San Luis in accordance with existing law and contractual arrangements. In addition, DWR expects that its role as operator will be recognized in all activities, including activities such as this proposed SLTP project, such that coordination can occur in an orderly manner at the earliest possible phase.

General Comments

1. The EIS/EIR should recognize the existing statutory, contractual, and regulatory environment of the San Luis Facilities, which necessarily would include a description of the San Luis facilities as a component of the State Water Project and of DWR's role at San Luis.

A10-3

Comment Set A10, cont.
California Department of Water Resources

Western Area Power Administration
August 31, 2015
Page three

Specifically:

- | | |
|--|-------|
| <ul style="list-style-type: none">• The EIR/EIS should recognize that DWR assumed responsibility almost 50 years ago for the care, operation, and maintenance of the facilities, including responsibility for transmission Interconnection, and has the perpetual right to continue in that role; the EIS/EIR's statement that SLDMWA operates and maintains the SLU components (at Section 1.4.2) should be revised to state that CDWR operates and maintains Gianelli and Dos Amigos Pumping-Generating Plants; similar misstatements throughout the document should be corrected. | A10-4 |
| <ul style="list-style-type: none">• Transmission interconnections and service have already been acquired by CDWR under the JUF Agreement pursuant to a FERC-approved agreement with PG&E. The statement under the No Action/No Project Alternative that Western would arrange for transmission service from CAISO should be deleted. Changes contemplated by this Project will require changes to the DWR-PG&E Interconnection Agreement along with PG&E and FERC approval for the changes; | A10-5 |
| <ul style="list-style-type: none">• DWR and WAPA have an existing Scheduling Coordinator Agreement to reimburse CDWR for scheduling federal energy to move USBR water; | A10-6 |
| <ul style="list-style-type: none">• Any changes to the 1961 Agreement required by the Project would require concurrence from signatories to the Agreement and appropriate authorization; | A10-7 |
| <ul style="list-style-type: none">• DWR's O&M Procedures for equipment within the existing substation should be recognized as part of the existing regulatory environment. | A10-8 |
| <ul style="list-style-type: none">• DWR concurrence is required for all encroachments pursuant to the Agreement. The DWR- and USBR-adopted joint Guidelines for Handling Right-of-Way Applications for Use of San Luis Unit Rights-of-Way (1979) govern management of encroachment permit applications for this project and should be recognized as part of the existing regulatory environment. | A10-9 |

Comment Set A10, cont.
California Department of Water Resources

Western Area Power Administration
August 31, 2015
Page four

- *Appendix D*: Operation and Maintenance describes operation and maintenance of the project without reference to DWR. In order to assure clear lines of responsibility and avoid confusion, Appendix D should disclose that for existing JUF infrastructure or modifications thereto, all transmission work, communication system maintenance, facility outages, upgrade and replacement work, regulatory coordination, and maintenance of the access roads must be done either by DWR or pursuant to an agreement with DWR and in accordance with DWR's existing O&M Procedures and the Bureau-DWR Guidelines. A10-10
- 2. DWR should be recognized as a cooperating agency under NEPA and a responsible agency under CEQA. DWR will commit to engage in the necessary consultation in an expedient manner, in order to assure no delay is occasioned by the fact of such consultation. A10-11
- 3. DWR's water for the State Water Project constitutes approximately 60 percent of the water moved through Dos Amigos and San Luis. The EIS/EIR should address how the project would affect CDWR's SWP water and power operations, scheduling of such operations, and costs. A10-12
- Specifically:
 - The EIS/EIR should disclose how the project will impact cost sharing under the JUF Agreement between USBR and CDWR. A10-13
 - The EIS/EIR should describe how delivery of federal power through new, separate transmission lines in a different Balancing Area Authority would be coordinated with CDWR's delivery of energy to its share of the JUF for the SWP if those facilities are located in a different Balancing Authority (BA). A10-14
 - The EIS/EIR should describe and mitigate potentially adverse operations and cost impacts to CDWR resulting from the project's changes to power operations. A10-15
- 4. The EIS/EIR should clearly disclose the proposed use of the new transmission lines. Although all of the USBR design drawings for the facilities title the facilities as "switchyards," the EIS/EIR identifies them as "substations," implying that the switchyards are utilized for transmission service beyond just serving the needs of the JUF. The full description of the A10-16

Comment Set A10, cont. California Department of Water Resources

Western Area Power Administration
August 31, 2015
Page five

proposed use is necessary to evaluate environmental impacts, as well as to support coordination with DWR on the technical aspects of this project.

A10-16
cont.

5. NERC/WECC compliance for the project facilities should be addressed in the EIS/EIR and discussed in technical planning coordination with DWR.

A10-17

Additional Comments

6. Overall, the EIS/EIR takes a generalized approach due to lack of survey information and other details. As such, the EIS/EIR in some instances lacks sufficient project description and mapping details for suitable impact analysis.

A10-18

Project details will need to be developed in some manner in order to facilitate specific impact analyses prior to groundbreaking, in order that DWR could rely on this document.

The following areas could use additional detail and analysis:

- The Biological Resources Alternative Comparison, Table 2-9 on page 2-30;
- Section 3.4.1.1 on page 3-17;
- Section 3.8 (Land Use)
- Section 4.2.3 page 4-5 (Prime Farmland) ;
- Section 4.4 (Biological Resources);
- Mitigation Measures in the Biological Resources Section, specifically MMs Bio-3, Bio-4, Bio-6, Bio-12, Bio-15, Bio-17, Bio-21, and Bio-28;
- Cultural Resource EPM on pages 4-58 and 4-59;
- Section 4.16 (Water Resources and Floodplains)
- Impact AQ-1 on page 4-13 and MM AQ-1 (Air Quality)
- MM Traffic-1, on page 4-105
- Impact Traffic-2

7. The EIS/EIR at Section 1 states that up to 1.25 million acre – feet is moved out of the California Aqueduct and Delta Mendota Canal into San Luis Reservoir. The basis for this number should be explained.

A10-19

8. Since the justification for this project is based solely on the expected cost savings from leaving the CAISO Balancing Area Authority, the EIS/EIR, especially the statement of project purposes and analysis of alternatives,

A10-20

Comment Set A10, cont.
California Department of Water Resources

Western Area Power Administration
August 31, 2015
Page six

- | | |
|--|-----------------|
| would benefit from an expanded explanation of the costs of the project and expected savings to be realized. Especially since, as noted above, CDWR's potential financial liability is not yet defined, the benefits need to be better explained. | A10-20
cont. |
| 9. Section 2.1.2.3 states that "Structures-Communication facilities, including fiber optic overhead ground wires would be installed on the transmission line structures for control and protection." Protection Coordination with CDWR (Operator) will be required with similar equipment. Additional information on protection equipment will be needed as part of the technical coordination for this project. | A10-21 |
| 10. Section 3 should address required coordination with CDWR and USBR on construction near or crossing the State only portions of the California Aqueduct pursuant to the Guidelines for Handling Right-of-Way Applications.

See specifically Section 3.8 Land Use and Impact Traffic-5, page 4-106, addressing bikeways, including the California Aqueduct Bikeway. | A10-22 |
| 11. Appendix D 1.3.1 Standard Operating Procedures and Appendix D 1.4.1 Category A- Inspection and Minor Maintenance Activities address equipment at the substation. CDWR's O&M procedures for equipment must be considered; and DWR needs more clarification if this equipment is included to determine impacts. | A10-23 |

Please provide CDWR with a copy of any subsequent environmental documentation when it becomes available for public review. Any future correspondence relating to this project should be sent to:

Anthony Chu
Environmental Assessment Branch
Division of Operations and Maintenance
Department of Water Resources
1416 Ninth Street, Room 604
Sacramento, CA 95814

If you have any questions, please contact Leroy Ellinghouse, Chief, SWP Encroachment Section, at (916) 653-7168, or Anthony Chu, Chief of the Environmental Assessment Branch, at (916) 653-9978.

Comment Set A10, cont.
California Department of Water Resources

Western Area Power Administration
August 31, 2015
Page seven

Sincerely,



David Samson, Chief
Chief, SWP Operations Support Office
Division of Operations and Maintenance
Department of Water Resources

cc: Mr. Jim Thomas, Chief, SLFD, CDWR
Ms. Veronica Hicks, Chief, Power and Risk Office, CDWR
Mr. Mark E. Andersen, SWP Assistant Deputy Director, CDWR
Mr. Carl A. Torgersen, SWP Deputy Director, CDWR
Mr. Kevin Howard, Powers Operations Manager, WAPA
Mr. Barry Mortimeyer, Chief Power Operations Division, USBR

Director, Service Analysis
Pacific Gas and Electric Company
245 Market Street, Mail Code N8C
P.O. Box 770000
San Francisco, CA 94177

With a copy to:
Manager, Electric Transmission Contract Management
Pacific Gas and Electric Company
77 Beale Street, Mail Code B13L
P.O. Box 770000
San Francisco, CA 94177

Comment Set A11 California State Parks - Central Valley District



State of California • Natural Resources Agency

Edmund G. Brown, Jr., Governor

DEPARTMENT OF PARKS AND RECREATION

Lisa Ann L. Mangat, Director

Central Valley District
22708 Broadway Street
Columbia, CA 95310
(209) 536-5930

August 31, 2015

Western Area Power Administration
Donald Lash
NEPA Document Manager
114 Park Shore Drive
Folsom, CA 95630

Ms. Sheryl Carter
Chief, Land Resource Management Division
Bureau of Reclamation
South Central California Office
1243 North Street
Fresno, CA 93721

Subject: DRAFT EIS/EIR: SAN LUIS TRANSMISSION PROJECT
SAN LUIS RESERVOIR STATE RECREATION AREA

Dear Mr. Lash and Ms. Carter:

This letter is to provide your agencies with California State Parks' comments related to the draft Environmental Impact Statement/Environmental Impact Report (EIS/EIR) for the San Luis Transmission Project.

The water features at San Luis Reservoir State Recreation Area (SLR SRA) are the biggest draw for people from all over the region to visit SLR SRA. People come to enjoy recreational activities such as boating, camping, fishing, wind surfing, and to relax and enjoy nature and the outdoor environment.

The Bureau of Reclamation (BOR), in conjunction with California State Parks, developed a Resource Management Plan and General Plan (RMP/GP) for SLR which was approved in the fall of 2013. The plan calls to "ensure that large expanses of open space are left in a natural state, and that existing open vistas remain uninterrupted." Further, the Goals and Guidelines section of the RMP/GP contains, in part, the following guidance: Section 3.4.1.5 *Scenic Resources* indicates that "important view corridors and high points have not been comprehensively inventoried" and that "Criteria to determine when views will be affected need to be formulated" as related to the "open, uninterrupted nature of the landscape in planning for future facilities". Section 4.2.1.1 *Scenic/Aesthetic* goals indicate Goal RES-S1 to "Preserve scenic vistas that overlook open land and water through the identification and definition of significant vista points and viewsheds." Further, the Guidelines indicate "Before development of new facilities, consider visual effects of new structures and site features within an identified viewsheds. Where feasible, avoid placement of new structures or other obstructions at or near identified significant vista points and along uninterrupted shorelines and landscapes." Goals RES-S2 indicates "Maintain large expanses of open space free of

A11-1

Comment Set A11, cont. California State Parks - Central Valley District

August 31, 2015
Page 2

visual and physical interruptions." The associated guideline indicates "minimize, shield, or use architectural controls in the development of new structures and reduce existing structures and other features that visually and physically fragment open space." Goal RES-S3 indicates "Where feasible, ensure that the mass and scale of new structures are compatible with the setting and do not dominate the surrounding landscape." Based on the above criteria, State Parks feels the conclusion of the San Luis Transmission Project that the visual impacts would "not result in significant and unavoidable impacts to visual resources in the San Luis Segment" is erroneous. The project will add to the built environment and deviate from the RMP/GP goals which will have a major impact on the ability to accomplish the goals in the RMP/GP.

A11-1
cont.

Additionally, should the proposed substation at the Off Highway Vehicle (OHV) use area become necessary, it would result in a significant and unavoidable impact to State Park visitors, operations, and potentially revenues. The existing 150 acre OHV area is already small in size as an OHV use area and would become impractical should 50 acres be removed. Therefore, should the Western Area Power Administration (WAPA) take the all or part of the 150 acre OHV use area parcel against the wishes of State Parks, it is requested that WAPA provide equivalent replacement facilities as mitigation adjacent to the existing OHV use area, or at an agreed upon and appropriate location within the Recreation Area. State Parks is also concerned with lighting from the substation reaching campers in the vicinity at night. State Parks requests that lighting be designed in such a manner that this is avoided.

A11-2

A11-3

Finally, Public Safety issues should be addressed with State Parks to prevent area circulation from being cut off from medical or law enforcement help during construction. Other construction-related impacts should be mitigated to prevent problems related traffic and noise. Reduction in access to the recreation area would cause a direct impact to revenues which State Parks would need to have mitigated.

A11-4

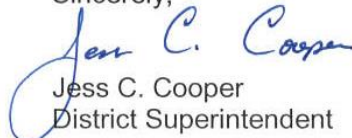
A11-5

A11-6

It is our intent to work cooperatively with WAPA and the BOR while pursuing our departmental mission in order to arrive at a mutually acceptable outcome. The project as proposed moves the property into a less desirable condition from a recreation standpoint. It adds to the built environment and removes a popular recreation activity. Taken in conjunction with the other energy project at the reservoir, State Park revenues from day use and camping fees could be reduced as a result of the reservoir being a less scenic and desirable place to be. Please feel free to contact me at (209) 536-5931 should any of our comments need clarification or further explanation.

A11-7

Sincerely,



Jess C. Cooper
District Superintendent

cc: Jack Harper, Sector Superintendent
Liz Steller, District Services Manager

Comment Set A12 Santa Clara Valley Water District

5750 Almaden Expressway, San Jose, CA 95118-3614 | (408) 265-2600 | www.valleywater.org



August 31, 2015

Western Area Power Administration
Donald Lash, NEPA Document Manager
114 Parkshore Drive
Folsom, CA 95630

Subject: San Luis Transmission Project Draft Environmental Impact
Statement/Environmental Impact Report

Dear Mr. Lash:

Thank you for the opportunity to provide comments on the Draft Environmental Impact Statement/Environmental Impact Report (EIS/EIR) for the San Luis Transmission Project (SLTP). Santa Clara Valley Water District (District) is supportive of any effort made by the U.S. Bureau of Reclamation (Reclamation), Western Area Power Administration (Western), and the San Luis Delta Mendota Water Authority to secure durable, reliable and affordable power transmission services for the San Luis Unit facilities of the Central Valley Project (CVP). The District is currently reviewing a cost-benefit analysis for the SLTP and is evaluating proposed funding and repayment mechanisms to ensure that project costs are equitably distributed in proportion with project benefits.

The EIS/EIR contains project alternatives sized at 500 kV or 230 kV, with assumptions on the amount of capacity available to third parties (non-water service contractors). The District would support Western's development of a larger project, but it must result in lowered costs to Authority members.

Again, we appreciate the opportunity to comment on the Draft EIS/EIR. Please contact Mr. Dana Jacobson by telephone at (408) 630-2932 or by email djacobson@valleywater.org with any questions.

Sincerely,

Garth Hall, Deputy Operating Officer
Water Utility Enterprise, Water Supply Division

Cc: Ms. Frances Mizuno
San Luis and Delta-Mendota Water Authority
15990 Kelso Road
Byron, CA 94514

Our mission is to provide Silicon Valley safe, clean water for a healthy life, environment, and economy.



+-+

Comment Set A13

Transmission Agency of Northern California



Date August 31, 2015

SENT BY E-MAIL (SLTPEIS-EIR@wapa.gov)

Mr. Donald Lash
Western Area Power Administration
Sierra Nevada Region
114 Parkshore Drive
Folsom, CA 95630

Subject: Transmission Agency of Northern California ("TANC") Comments on the Draft EIS/EIR Report for the San Luis Transmission Project

Dear Mr. Lash:

The Transmission Agency of Northern California ("TANC") is a California joint powers agency established by a group of California publicly-owned utilities in 1984. The TANC members include 15 publicly-owned utilities in the cities of Alameda, Biggs, Gridley, Healdsburg, Lodi, Lompoc, Palo Alto, Redding, Roseville, Santa Clara and Ukiah, as well as the Sacramento Municipal Utility District, the Modesto Irrigation District and the Turlock Irrigation District. The Plumas-Sierra Rural Electric Cooperative is an Associate Member. TANC is commenting on the Draft Environmental Impact Statement /Environmental Impact Report for the San Luis Transmission Project (the "Draft EIS/EIR") as the owner of certain real property that may be affected by the proposed project as described in the Draft EIS/EIR.

The Draft EIS/EIR states that: "Western is proposing to construct two new 500-kV substations: Tracy East Substation and Los Banos West Substation. The Tracy East Substation would be adjacent to and east of the existing Tracy Substation with a footprint of up to 50 acres (see Figure 2-6a)." (Draft EIS/EIR at p. 2-3, Subsection 2.1.1). TANC owns the real property (Alameda County APN 99B-7100-3-2) that appears to be under consideration by Western as the proposed location for the Tracy East Substation.

TANC acquired the property of interest for TANC's potential future use for utility purposes. TANC currently leases the property to an individual for agricultural use. If Western decides to proceed with its proposed development of the Tracy East Substation, TANC will be willing to discuss with Western how the TANC property can be utilized for the San Luis Transmission Project without compromising TANC's potential future use of the property for its own utility purposes. TANC would undertake such supplemental environmental review under the California

A13-1

A Public Entity whose Members include:
Alameda, Biggs, Gridley, Healdsburg, Lodi, Lompoc, Modesto Irrigation District,
Palo Alto, Plumas-Sierra Rural Electric Cooperative, Redding, Roseville,
Sacramento Municipal Utility District, Santa Clara, Turlock Irrigation District, Ukiah

Comment Set A13, cont.
Transmission Agency of Northern California

Mr. Donald Lash
August 31, 2015
Page 2 of 2

Environmental Quality Act as necessary to support such cooperation when sufficient information is available for such review.

**A13-1
cont.**

Sincerely yours,

A handwritten signature in blue ink, appearing to read "Don Wagenet", with a long horizontal flourish extending to the right.

Don Wagenet
TANC

Comment Set A14 Contra Costa Water District



August 31, 2015

Board of Directors
Joseph L. Campbell
President
Lisa M. Borba
Vice President
Bette Boatman
John A. Burgh
Connstance Holdaway

General Manager
Jerry Brown

Mr. Donald Lash
NEPA Document Manager
Western Area Power Administration
Sierra Nevada Region
114 Parkshore Drive
Folsom, CA 95630

**Subject: Comments on the Draft EIS/EIR for the San Luis Transmission Project
(DOE/EIS-0496; State Clearinghouse No. 2013112059)**

Dear Mr. Lash:

Contra Costa Water District (CCWD) owns approximately 4,000 acres of grassland habitat off Corral Hollow Road in San Joaquin County that was purchased as mitigation for the Los Vaqueros Reservoir Expansion Project in 2012. The property is managed according to a Habitat Management Plan approved by California Department of Fish and Wildlife (CDFW) and U.S. Fish and Wildlife Service (Service) earlier this year. Additionally, the property is being placed in a Conservation Easement, currently under review by CDFW. The San Luis Transmission Project (SLTP) proposes to run 500 kV transmission lines through this property. CCWD previously discussed the project with you and other members of your team on a telephone conference held July 22, 2015. Information regarding the Large-flowered Fiddleneck which grows on the property was subsequently provided.

**A14-1
cont.**

CCWD has reviewed the Draft EIS/EIR and has the following comments:

- Because CCWD's property is managed for conservation purposes and will soon be under a conservation easement, CCWD requests that the property be subject to the minimum amount of disturbance necessary both during construction and long-term operations and maintenance. Specifically, staging and storage areas should not be located on the property, easement areas should be as narrow as possible and duration of work on the property should be as short as possible.
- CCWD's Corral Hollow property should be included in Table 3.4-3 listing Conservation Easements that will be impacted by the SLTP. All subsequent sections of the EIS/EIR that address Conservation Easements should be revised to include the Corral Hollow property. For instance, the analysis conducted for Biological Impact 6 and Land Use Impact 4 should be expanded to include the CCWD Corral Hollow property.
- CCWD appreciates the commitment to avoid and minimize impacts to agriculture including grazing, and to compensate if damage occurs despite these efforts. The grazing program on the Corral Hollow property is integral to meeting habitat and species requirements on an annual basis. Minimizing disruption to the grazing program from on-going transmission line O&M will also be important and should be explicitly stated.

A14-2

A14-3

A14-4

Comment Set A14, cont.
Contra Costa Water District

Mr. Donald Lash
NEPA Document Manager
Western Area Power Administration
August 31, 2015
Page 2

Copies of the final Habitat Management Plan and draft Conservation Easement for the Corral Hollow property are available upon request. Please let me know if you have any questions or need additional information from CCWD.

Sincerely,



Fran Garland
Watershed and Environmental Planning Manager
Contra Costa Water District

FG/rlr

Comment Set A15

San Joaquin Valley Air Pollution Control District



September 03, 2015

Donald Lash
NEPA Document Manager
Western Area Power Administration
Sierra Nevada Region
114 Parkshore Drive
Folsom, CA 95630

Project: San Luis Transmission Project Draft Environmental Impact Statement/Environmental Impact Report

District CEQA Reference No: 20150650

Mr. Lash:

The San Joaquin Valley Unified Air Pollution Control District (District) has reviewed the project referenced above consisting of the San Luis Transmission Project Environmental Impact Statement/Environmental Impact Report (Draft EIS/EIR). The project proposes at minimum to construct, own, operate, and maintain a new 230-kV transmission line about 62 miles in length between Western's Tracy Substation and Western's San Luis Substation and a new 70-kV transmission line about 5 miles in length between the San Luis Substation and O'Neill Substations.

The District offers the following comments:

1. General Conformity

The Draft EIS/EIR should require emissions above the de minimis thresholds to be mitigated to zero.

Under the EPA General Conformity when emissions exceed the *de minimis* levels, a reduction is required to reduce emissions to zero. The Draft EIS/EIR demonstrates that the project will exceed the *de minimis* levels in 2018 and 2019 for NOx and VOC. Therefore these emissions should be reduced to zero.

A15-1

Sayed Sadredin
Executive Director/Air Pollution Control Officer

Northern Region
4800 Enterprise Way
Modesto, CA 95356-8718
Tel: (209) 557-6400 FAX: (209) 557-6475

Central Region (Main Office)
1990 E. Gettysburg Avenue
Fresno, CA 93726-0244
Tel: (559) 230-6000 FAX: (559) 230-6061

Southern Region
34946 Flyover Court
Bakersfield, CA 93308-9725
Tel: 661-392-5500 FAX: 661-392-5585

www.valleyair.org

www.healthyliving.org

Printed on recycled paper.

Comment Set A15, cont. San Joaquin Valley Air Pollution Control District

District CEQA Reference No: 20150650

Page 2 of 5

2. Impacts AQ-1, AQ-2, AQ-3 and AQ-6 for reduced or offset construction equipment emissions

A15-2

The District advises that the impacts and mitigation measures for AQ-1, AQ-2, AQ-3 and AQ-6 are reassessed.

Due to the nature of this proposed project, it appears only construction emissions would have the potential to have significant impacts. Impact AQ-1 and AQ-3 address air quality standards. Impact AQ-2 addresses sensitive receptors. Impact AQ-6 addresses conformity.

For Impacts AQ-1, AQ-2, AQ-3 and AQ-6, in the Draft EIS/EIR quantification of actual construction emissions will depend on final engineering that is not available at this time. It concludes that with the implementation of MM AQ-1 (reduce or offset construction equipment) and with the final engineering that is anticipated to be conducted at a later time, that the impact under CEQA would be less than significant.

The District would like to clarify that the impacts were not evaluated appropriately and therefore disagrees that Mitigation Measure AQ-1 "Reduce or offset construction equipment emissions" would be sufficient to reduce those impacts to a less than significant impact.

The District provides guidance to assist regulatory agencies and the public in addressing air quality impacts under the California Environmental Quality Act (CEQA). The guidance is called *Guidance for Assessing and Mitigating Air Quality Impacts (GAMAQI)*. Construction related emission thresholds can be found in the GAMAQI. Agencies should implement the latest guidance available from the Air District on the subject of air quality under CEQA. The guidance is available at the following link:

http://www.valleyair.org/transportation/GAMAQI_3-19-15.pdf

The District would like to clarify that a Less Than Significant Impact with Mitigation Measure conclusion cannot be made because the Draft EIS/EIR does not contain substantial evidence, including but not limited to calculations, to support such conclusion.

3. Fugitive dust emissions

A15-3

The Draft EIS/EIR should assess fugitive dust impacts and mitigation measures.

The Draft EIS/EIR concludes that short-term (construction) air impacts will have a potentially significant impact on air quality but with mitigation these impacts would be reduced to a less than significant impact. However, the list of mitigation measures required of all construction projects will address exhaust NOx emissions and not fugitive dust impacts (e.g. PM10). The Draft EIS/EIR should consider mitigation of fugitive dust impacts.

Comment Set A15, cont. San Joaquin Valley Air Pollution Control District

District CEQA Reference No: 20150650

Page 3 of 5

The recommended approach to mitigating fugitive dust emissions from construction-related activities focuses on a consideration of whether all feasible control measures are being implemented. District fugitive dust rules, collectively known as Regulation VIII, contain a series of requirements. The purpose of Regulation VIII is to reduce the amount of PM₁₀ entrained into the atmosphere as a result of emissions generated from anthropogenic (man-made) fugitive dust sources.

A15-3
cont.

It should be noted that although compliance with District Regulation VIII substantially reduces project specific fugitive dust emissions, it may not be sufficient to reduce project specific emissions to less than significant levels. Furthermore, District Regulation VIII does not reduce construction exhaust emissions. Therefore, in order to conclude a less than significant impact, the Draft EIS/EIR should also contain an assessment and quantification of mitigation measures for fugitive PM₁₀.

4. Impact AQ-3

The District advises using the screening level of 100 lbs. per day for evaluating if the project would contribute to or violate the air quality standards, and performing an ambient air quality analysis (AAQA) if applicable.

A15-4

When assessing the significance of project-related impacts on air quality, it should be noted that the impacts may be significant when on-site emission increases from construction activities or operational activities (including permitted equipment/activities and non-permitted equipment/activities) exceed the 100 pounds per day screening level of any criteria pollutant after implementation of all enforceable mitigation measures. Please be advised that a less than significant impact for criteria pollutants does not mean a less than significant for AAQA.

Under such circumstance, the District recommends that an ambient air quality analysis be performed. An ambient air quality analysis uses air dispersion modeling to determine if emission increases from a project will cause or contribute to a violation of the ambient air quality standards.

5. Impact AQ-4

The Draft EIS/EIR should assess toxic air contaminants quantitatively rather than qualitatively.

A15-5

The District has previously recommended that Project related health impacts be evaluated to determine if emissions of toxic air contaminants (TAC) will pose a significant health risk to nearby sensitive receptors. The District still recommends that this assessment be performed, and that it be quantitative in nature rather than the qualitative discussion presented in the Draft EIS/EIR (Impact AQ-4).

Comment Set A15, cont. San Joaquin Valley Air Pollution Control District

District CEQA Reference No: 20150650

Page 4 of 5

Health Impacts: Project related health impacts should be evaluated to determine if emissions of toxic air contaminants (TAC) will pose a significant health risk to nearby sensitive receptors. TACs are defined as air pollutants that which may cause or contribute to an increase in mortality or serious illness, or which may pose a hazard to human health. The most common source of TACs can be attributed to diesel exhaust that is emitted from both stationary and mobile sources. Health impacts may require a detailed health risk assessment (HRA).

A15-5
cont.

Prior to conducting an HRA, an applicant may perform a prioritization on all sources of emissions to determine if it is necessary to conduct an HRA. A prioritization is a screening tool used to identify projects that may have significant health impacts. If the project has a prioritization score of 10 or more, the project has the potential to exceed the District's significance threshold for health impacts of 20 in a million and an HRA should be performed.

If an HRA is to be performed, it is recommended that the project proponent contact the District to review the proposed modeling approach. The project would be considered to have a significant health risk if the HRA demonstrates that project related health impacts would exceed the District's significance threshold of 20 in a million.

More information on TACs, prioritizations and HRAs can be obtained by:

- E-mailing inquiries to: hramodeler@valleyair.org; or
- Visiting the District's website at:
http://www.valleyair.org/busind/pto/Tox_Resources/AirQualityMonitoring.htm.

6. Idling Restriction Mitigation Measure for Impact AQ-1

The District acknowledges that the mitigation measure pertaining to minimizing truck idling for 5 minutes be made a condition of approval.

A15-6

The Airborne Toxic Control Measure (ATCM) for idling by the State includes numerous exceptions to the 5 minute idling limitation. When evaluating truck idling emissions, it is typical for an analysis to assume a 15 minute idling time unless measures to ensure that trucks idle for only 5 minutes are included as mitigation measures in the CEQA process and is included in the land use permit.

All project specific assumptions used in modeling and for mitigation measures that have the effect of reducing or mitigating project related impacts must be fully enforceable through permit conditions, agreements, or other legally binding instruments (CEQA Guidelines §15126.4, subd.(a)(2)). Therefore, the District acknowledges and recommends that the idling restriction including all those mitigation measures under MM AQ-1 be enforceable and made a condition of approval.

Comment Set A15, cont. San Joaquin Valley Air Pollution Control District

District CEQA Reference No: 20150650

Page 5 of 5

7. District Rule 9510

A15-7

The project proponent is required to submit an Air Impact Assessment (AIA) application to the District no later than applying for final discretionary approval, and to pay any applicable off-site mitigation fees.

The proposed project would equal or exceed the applicability threshold of 9,000 square feet. The Draft EIS/EIR indicates that this project is to comply with District's Rule 9510 (Indirect Source Review). The District agrees with the Draft EIS/EIR conclusion that the proposed project is subject to District Rule 9510 (Indirect Source Review).

District Rule 9510 is intended to mitigate a project's impact on air quality through project design elements or by payment of applicable off-site mitigation fees. Any applicant subject to District Rule 9510 is required to submit an Air Impact Assessment (AIA) application to the District no later than applying for final discretionary approval, and to pay any applicable off-site mitigation fees. If approval of the subject project constitutes the last discretionary approval by your agency, the District recommends that demonstration of compliance with District Rule 9510, including payment of all applicable fees, be made a condition of project approval. Information about how to comply with District Rule 9510 can be found online at: <http://www.valleyair.org/ISR/ISRHome.htm>.

If you have any questions or require further information, please call Michael Corder at (559) 230-5818.

Sincerely,

Arnaud Marjollet
Director of Permit Services



Chay Thao
Program Manager

AM:mc

Comment Set A16 National Park Service



United States Department of the Interior
NATIONAL PARK SERVICE
National Trails Intermountain Region
324 South State Street, Suite 200
Salt Lake City, Utah 84111



IN REPLY REFER TO: ER-15/0406 San Luis Transmission Project, Alameda, Merced, San Joaquin and Stanislaus Counties, California

Dear:

Thank you for your Draft Environmental Impact Statement (DEIS) for the proposed San Luis Transmission Project (SLTP). It is my understanding that the purpose of the proposed undertaking is to provide for continuity of cost-effective energy transmission services as well as respond to a transmission service request by an eligible customer.

A16-1

It is my understanding that the proposed actions for the SLTP include the following:

- A new 500-kV transmission line between the new Tracy East and Los Banos West Substations
- A new 230-kV transmission line between the new Los Banos West Substation and Western's existing San Luis Substation
- A new 230-KV transmission line between Western's existing San Luis Substation and Western's existing Dos Amigos Substation *or* a new 230-kV transmission line between the new Los Banos West Substation and Western's existing Dos Amigos Substation
- An interconnection with the existing Western 500-kV Los Banos-Gates No. 3 transmission line
- A new 70-kV transmission line between the existing San Luis and O'Neill Substations
- New 230-kV terminal bays at Western's San Luis and Dos Amigos Substations
- A new 230/70-kV transformer bank and interconnection facilities at the San Luis Substation

I have reviewed the DEIS and I note that the proposed Butterfield Overland National Historic Trail (BUOV) is within the southernmost segment of the Area of Potential Effect (APE) for the proposed undertaking. The feasibility study for the BUOV is ongoing, and the National Park Service does not comment on project effects for trails under study. However, it would seem prudent to discuss the BUOV under Historic Period Archaeological Resources and under Historic Setting (both in Section 3.5). Although the Butterfield Overland Route is still under evaluation as a National Historic Trail, it is still an archaeological resource and so a discussion regarding the lack of physical evidence for this site within the APE may be merited under Section 3.5.1.1 (Affected Environment, Resources Present).

A16-2

Additionally, it may improve reader clarity if the DEIS were to note that the Camino Real referenced in Section 3.5 is not the same archaeological and historic resource as El Camino Real de Los Tejas National Historic Trail or El Camino Real de Tierra Adentro National Historic Trail (both of which are often referred to as "Camino Real" in casual parlance).

A16-3

More information about the Butterfield Overland feasibility study can be found at <http://parkplanning.nps.gov/projectHome.cfm?projectId=33568>. I can be reached via phone (801-741-1012 ext 115), email (jill_jensen@nps.gov) or the address listed above to obtain trails related GIS data and for future notices regarding this project. Please don't hesitate to contact me should you need clarification or additional information.

Sincerely,

Jill Jensen, Archaeologist

Comment Set B1

HORUS Renewables Corp + San Luis Renewables LLC



February 23, 2015

Mr. Russell Knight
Western Area Power Administration
Sierra Nevada Region
144 Parkshore Drive
Folsom, CA 95630-4710

Re: San Luis Transmission Project

Dear Mr. Knight,

As you know from our recently submitted interconnection requests HORUS Renewables Corp, and its partner, San Luis Renewables, LLC, are developing three sites around the San Luis Reservoir for use as solar energy generation facilities. We are proposing to interconnect one of our facilities into the San Luis substation (the “Medeiros Site”), see Exhibit A, and the other two facilities are proposed to interconnect into the O’Neill substation (the “O’Neill Sites”), see Exhibit B (collectively, the “Projects”).

B1-1

We are writing today to communicate our support of the San Luis Transmission Project (SLTP) currently being planned by the Western Area Power Administration (WAPA) on behalf of the United States Bureau of Reclamation (Reclamation). Additionally, we would like to share some thoughts on the transmission alignments currently being considered for SLTP. Our hope is to work with WAPA and Reclamation to identify the best possible alignment for SLTP that has the least possible impact to our Projects.

It is our expectation that WAPA has two potential alignments possibilities for the SLTP as it transects the San Luis Reservoir federal lands:

- 1) A western alignment that could skirt the west side of the O’Neill Forebay and terminate into the San Luis substation and then interconnect to the O’Neill substation with a new 70kV line then travelling around the southeastern edge of the O’Neill Forebay; and
- 2) An eastern alignment that could skirt the east side of the O’Neill Forebay and terminate into the Los Banos substation with a 70kV line interconnecting the O’Neill substation travelling the same southeastern route and a 230kV line interconnecting Los Banos to the San Luis substation.

B1-2

If our expectation is roughly accurate, we believe there are two potential conflicts with both our current proposed Projects and a future project opportunity that we would like to point out and avoid if possible:

B1-3

Comment Set B1, cont.

HORUS Renewables Corp + San Luis Renewables LLC



1) If the eastern alignment is the preferred alternative for the SLTP, we suggest that the alignment follows the western edge of the existing PG&E Los Banos-Westley 230kV line approximately one half mile past the O'Neill substation before turning east to avoid the wildlife area. This alignment would then avoid our O'Neill Sites; and

**B1-3
cont.**

2) If the western alignment is the preferred alternative for the SLTP, we suggest that the alignment follow the western edge of the existing PG&E Tesla-Los Banos 500vK lines to the tower closest to the San Luis Creek recreational area access road and then closely follow this same road to Highway 152 before crossing the highway and terminating into the San Luis substation. This avoids our future project development sites in this area. We further suggest that the 70kV line interconnecting the O'Neill substation should remain on the southwestern edge of Highway 152 for approximately three miles before crossing north over the highway adjacent to the Los Banos substation. This alignment could facilitate the possible sharing of construction and costs between the 70kV line and our "Gen-Tie" line originating from the Medeiros Site as well as avoid future development sites identified in a site control agreement executed by Reclamation and San Luis Renewables, LLC.

B1-4

To reiterate our previous statement, our objective of these comments is to help WAPA and Reclamation construct the best possible alignment for SLTP. We would welcome an opportunity to further discuss our suggestions with you at the most appropriate time. Thank you for your time and consideration.

Regards,

HORUS RENEWABLES CORPORATION

Lars Peter
Director, US

SAN LUIS RENEWABLES, LLC

Neal Aronson
President

Comment Set B2

Planetary Ventures

Email: San Luis Transmission Project EIS/EIR Team

From: Carl Honaker [<mailto:chonaker@pv-nuq.com>]
Sent: Friday, July 24, 2015 4:35 PM
To: SNR SLTPEIS-EIR
Subject: EIS/EIR for San Luis Transmission Project

Dear Mr. Lash,

On April 1, 2015 Planetary Ventures assumed management of a 96 year leasehold agreement with NASA Ames Research Center for the former Moffett Federal Airfield.

B2-1

We are in receipt of your letter regarding the above EIS/EIR. It was sent to NASA Ames Research Center, Airfield Management Office Ms 158-01, Moffett Field, CA 94035.

We have no comments on the project as it does not impact Moffett Airfield.

In the future please use the following address:
Planetary Ventures Airfield Operations
P.O. Box 221
Moffett Field, CA 94035

B2-2

Thank You,
Carl Honaker
Airfield Manager
Moffett Airfield - Planetary Ventures
AFCO AvPORTS Management LLC
P.O. Box 221, Moffett Field, CA 94035-0221
Deliveries: B158 Cody Road, Moffett Field, CA 94035
Desk: 650-386-0687
Cell: 408-599-8532

EMAIL CONFIDENTIALITY NOTICE: The contents of this e-mail message and any attachments are intended solely for the addressee(s) and may contain confidential and/or legally privileged information. If you are not the intended recipient of this message or if this message has been addressed to you in error, please immediately alert the sender by reply e-mail and then delete this message and any attachments. If you are not the intended recipient, you are notified that any use, dissemination, distribution, copying or storage of this message or any attachment is strictly prohibited.

Comment Set B3 Wright Solar Park LLC

WRIGHT SOLAR PARK, LLC
1777 Borel Place, Suite 102
San Mateo, CA 94402
Tel. +1 650 539 3380

www.frontier-renewables.com

August 27, 2015

Mr. Donald Lash
NEPA Document Manager
Western Area Power Administration
Sierra Nevada Region
114 Parkshore Drive
Folsom, CA 95630
EMAIL: SLTPEIS-EIR@wapa.gov

RE: San Luis Transmission Project Draft
Environmental Impact
Statement/Environmental Impact Report

Dear Mr. Lash,

Wright Solar Park, LLC has reviewed the San Luis Transmission Project (SLTP) Draft Environmental Impact Statement/Environmental Impact Report (EIR) and is **strongly opposed** to a) the South Segment Proposed Project corridor and b) the South Segment San Luis to Dos Amigos Alternative (SLDAA). Both the South Segment Proposed Project and the SLDAA are in direct conflict with the 200MW Wright Solar Park project (Wright) and encroach and transect property under Wright's control.

Wright Solar Park is a fully permitted solar facility that is slated to begin construction in 2016. It holds an approved Conditional Use Permit (CUP) and certified CEQA environmental document from Merced County. Wright has an executed Large Generator Interconnection Agreement (LGIA) with Pacific Gas & Electric Company (PG&E) and California Independent System Operator (CAISO). As part of the LGIA, Wright Solar will be constructing a new 230kV switching station for PG&E that will be situated directly in the path of the Proposed Project and SLDAA.

Wright has more than 2,700 contiguous acres under site control directly north of the Los Banos Reservoir (see map in Exhibit A), including approximately 2.85 miles of the Proposed Project and the SLDAA transmission corridors. The entire 2,700 acre footprint will be maximized up to existing easement lines for deployment of solar photovoltaic modules, racking materials, and associated electrical components and infrastructure in order to generate over 500 Gwh of clean energy annually. Any area within the 2,700 acre that is not being used for the solar facility will be placed into perpetual

B3-1

Comment Set B3, cont. Wright Solar Park LLC

conservation easement. The Proposed Project and the SLDAA would result in direct interference with the Wright Solar Project and its associated conservation easements.

B3-1
cont.

Cost of Acquisition of Corridor through Wright Solar Park

Both the Proposed Project corridor and SLDAA will require the acquisition of a corridor approximately 2.85 miles in length through the Wright Solar Park. The acquisition of such a corridor will cause damage to the Wright Solar Park in the range of a billion dollars (\$1,000,000,000). Damages in the billion dollar range would therefore be sought in any eminent domain action for compensation of lost business goodwill (Code of Civil Procedure Section 1263.510), compensation for the taking of the land (Code of Civil Procedure Section 1263.310 et seq.), and compensation to the remaining property (Code of Civil Procedure Section 1263.410 et seq.).

B3-2

The EIR is Inadequate Under CEQA and NEPA

Alternatives

The No Action Alternative is feasible and avoids all environmental impacts of the Project while satisfying most of the Project Objectives. The EIR states that the CAISO Tariff “would be so expensive as to render the [No Project Alternative] infeasible.” (EIR at p. 2-34.) This conclusion is not based on substantial evidence. The EIR provides no information on the current rates paid by end users of the electricity that would be transmitted through the Project, the ability to increase the rates paid by such users, and the costs of acquiring the property rights to construct the Project. The EIR instead makes the conclusory statement that “rates would be higher for Reclamation and its customers under the No Action Alternative in comparison to the Proposed Project.” (EIR at p. 4-103.)

B3-3

Also, while the EIR states that the estimated cost to construct the project is \$400,000,000, it provides no details on how this figure was calculated. The public is therefore unable to determine whether it is reasonable. For example, it is unclear if that figure includes the costs associated with acquisition of the necessary property rights to construct the project. As noted above, the cost to acquire the 2.85 mile right-of-way through the Wright Solar Project would greatly exceed the total cost estimate to construct the approximately 100 miles of transmission lines contemplated by the Proposed Project. The EIR simply does not contain sufficient information to determine whether the marginal costs of the No Action Alternative as compared to the cost of the Proposed Project are so great that a reasonably prudent person would not proceed with the No Action Alternative. (See, e.g., *The Flanders Foundation v. City of Carmel-by-the Sea* (2012) 202 Cal.App.4th 603.) Western Area Power Association and the San Luis & Delta-Mendota Water Authority should strongly consider adopting the No Action Alternative that would satisfy all of the Project Objectives other than “cost certain” transmission while at the same time avoiding *all* of the project’s environmental impacts.

B3-4

Biological Resources

Wright Solar Park did not grant right of entry for the SLTP or its alternatives to be studied in detail. As a result, on-site studies of the portion of the SLTP that is under Wright’s control were not adequately or sufficiently studied for biological resources. Therefore, the level of analysis provided in the both CEQA and NEPA analyses is inadequate to fully describe the impacts associated with the SLTP Proposed Project and the SLDAA.

B3-5

Comment Set B3, cont.
Wright Solar Park LLC

Air Quality and Green House Gas Impacts

Erecting the transmission line in the South Segment as contemplated by the Proposed Project and SLDAA would cause either the removal or reduction in output of the Wright Solar Park project. The Wright Solar Park will generate clean renewable energy that contributes to California's Renewable Portfolio Standard (RPS) that would be eliminated or greatly reduced if the SLTP moves forward as planned or with SLDAA. The loss of this clean renewable energy generation would result in increased reliance on carbon-based fuel sources that pose a direct health hazard and irreparably contribute to climate change that is threatening many ecosystems in California. The EIR does not disclose the increase in greenhouse gas emissions from reducing the size of the Wright Solar Project.

B3-6

Socioeconomics

The EIR does not disclose the reduced tax revenue to Merced County from the impacts of the project to the Wright Solar Project. Nor does the EIR disclose the permanent displacement of the Wright Solar Project.

B3-7

Wright strongly urges WAPA and the Water Authority to pursue the "Billy Wright Road" alternative (2.2.1.6) as this is the only proposed option that would not directly interfere with the Wright Solar Project.

If the No Action Alternative is not adopted, Wright Solar Park strongly encourages the Western Area Power Association and the San Luis & Delta-Mendota Water Authority to pursue the "Billy Wright Road" alternative in order to avoid conflicts with the Wright Solar Project and the increased environmental impacts discussed above. The EIR's Alternative Screening Report agrees that the Billy Right Road Alternative would avoid impacts to the Wright Solar Project. (EIR Appendix A at p. 9.) The Billy Wright Road alternative would also avoid the need for the extraordinarily high costs associated with obtaining the necessary property right to traverse the Wright Solar Project as well as the uncertainty involved in obtaining those rights given our strong opposition. If the Western Area Power Association and the San Luis & Delta-Mendota Water Authority continue to pursue the South Segment Proposed Project or the SLDAA option for the SLTP project, Wright Solar Park, LLC will use all the resources available at its disposal to protect its investment.

B3-8

We are available for a meeting to discuss our concerns in more detail and appreciate the opportunity to comment in order to preserve the environmental interests of the State of California and its residents.

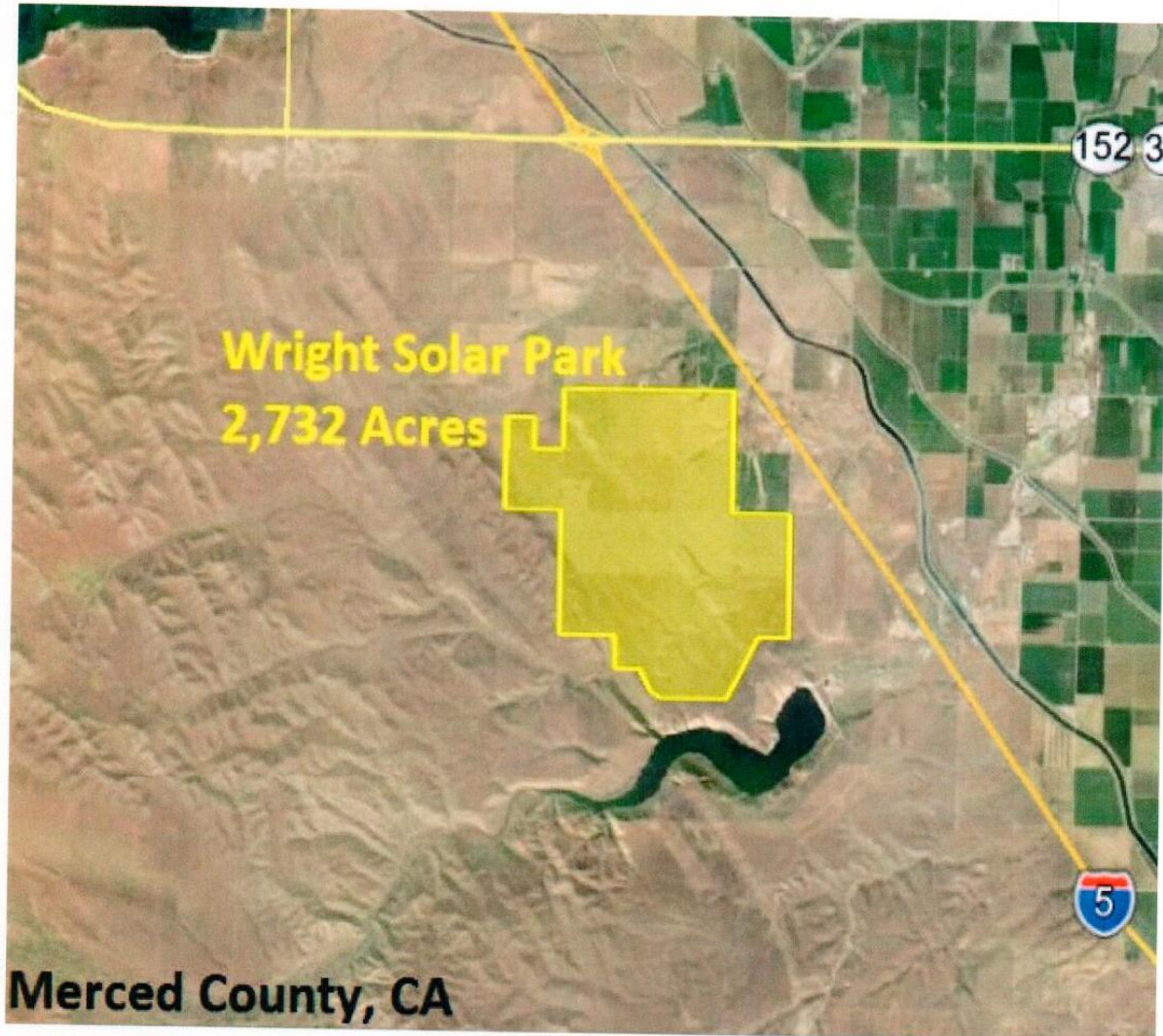
Sincerely,



Balduin Hesse
CEO/President of Frontier Renewables LLC
Manager of Wright Solar Park, LLC

**Comment Set B3, cont.
Wright Solar Park LLC**

Exhibit A: Wright Solar Park Location



068292\7118247v2

Comment Set B4 San Joaquin Council of Governments



77058-20739

Rod A. Attebery

509 West Weber Avenue
Fifth Floor
Stockton, CA 95203

August 31, 2015

Via E-Mail

Post Office Box 20
Stockton, CA 95201-3020

(209) 948-8200
(209) 948-4910 Fax

NEUMILLER.COM

Mr. Donald Lash
NEPA Document Manager
Western Area Power Administration
Sierra Nevada Region
114 Parkshore Drive
Folsom, CA 95630

SLTPEIS-EIR@wapa.gov

Re: San Luis Transmission Project EIR/EIS Comment

Mr. Lash:

Thank you for the opportunity to comment on this project. Our office represents the San Joaquin Council of Governments, Inc. (SJCOG, Inc.), the agency that administers the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP). As the above referenced project, as proposed, includes impacts to existing conservation easements held by SJCOG, Inc. pursuant to the SJMSCP, we submit the following comments on behalf of our client:

B4-1

1. General background: The SJMSCP is a Habitat Conservation Plan overseen by the U.S. Fish and Wildlife Service (USFWS) and the California Department of Fish and Wildlife (CDFW). Each conservation easement acquired under the SJMSCP is acquired with specific requirements which are agreed upon and approved by SJCOG, Inc. in conjunction with USFWS and CDFW. The terms of the conservation easement are set forth in a conservation easement deed and a Preserve Management Plan (PMP), both of which are recorded against the property.
2. Mitigation Measure BIO-2 states that during construction and O&M activities that "Western will comply with conditions of any affected existing conservation easement, and will avoid and minimize impacts within conservation easements to the extent feasible."

B4-2

973749-2

Comment Set B4, cont. San Joaquin Council of Governments

August 31, 2015
Page 2

The impact associated with MM BIO-2 is identified as one that would “Adversely affect a listed endangered, threatened or proposed species or designated critical habitat, or a non-listed special-status plant or animal species either directly or through habitat loss or modification” and as such an impact would have significant effects on biological resources. *San Luis Transmission Project EIR/EIS, Section 4.4.1, p. 4-19.*

B4-2
cont.

The conservation easements held by SJCOG, Inc. prohibit ground disturbance of any kind within the easement area. To the extent the project disturbs a conservation easement held by SJCOG, Inc., it would result in a violation of the terms of the easement and would result in a significant and unavoidable impact.

3. Mitigation Measure BIO – 28 states, “Compensatory mitigation will be required for temporary and permanent impacts to San Joaquin kit fox habitat. Compensation may take the form of (a) acquiring and dedicating lands into conservation easements or (b) purchasing mitigation credits at compensation ratios that have been approved by state and federal agencies. Impacts within conservation easements may require compensatory mitigation at higher ratios than impacts outside of easements, and mitigation will be consistent with the requirements of the easement.”

B4-3

The impact associated with MM BIO-2 is identified as one that would “Adversely affect a listed endangered, threatened or proposed species or designated critical habitat, or a non-listed special-status plant or animal species either directly or through habitat loss or modification” and as such an impact would have significant effects on biological resources. *San Luis Transmission Project EIR/EIS, Section 4.4.1, p. 4-19.*

The conservation easements held by SJCOG, Inc. prohibit ground disturbance of any kind within the easement area. To the extent the project disturbs a conservation easement held by SJCOG, Inc., it would result in a violation of the terms of the easement and would result in a significant and unavoidable impact.

4. Mitigation Measure BIO – 31 states in part, “Impacts within conservation easements may require compensatory mitigation at higher ratios than impacts outside of easements, and mitigation will be consistent with the requirements of the easement.”

B4-4

The impact associated with MM BIO-2 is identified as one that would “Adversely and substantially affect native plant communities, including

Comment Set B4, cont.
San Joaquin Council of Governments

August 31, 2015
Page 3

riparian areas or other sensitive communities” and as such an impact would have significant effects on biological resources. *San Luis Transmission Project EIR/EIS, Section 4.4.1, p. 4-19.*

**B4-4
cont.**

The conservation easements held by SJCOG, Inc. prohibit ground disturbance of any kind within the easement area. To the extent the project disturbs a conservation easement held by SJCOG, Inc., it would result in a violation of the terms of the easement and would result in a significant and unavoidable impact.

5. Impact BIO-6 states that the Project will “Conflict with the provisions of an adopted local, regional, state, or federal habitat conservation plan.

The impact identifies that portions of the Project are within areas covered by the SJMSCP (North Segment and Central Segment). The impact also identifies that a number of established conservation easements exist in the Project Area. However, the impact only identifies SJCOG, Inc.’s Tracy 580 Business Park Preserve in the Central Segment. The project will also impact the SJCOG, Inc. Cubiburu Preserve and the USFWS South Preserve held by SJCOG, Inc. for the benefit of USFWS.

B4-5

Impact BIO-6 goes on to state, “The Proposed Project would avoid impacts within conservation easements to the extent feasible (Mitigation Measure BIO-2), and Western would comply with all applicable requirements within conservation easements (Mitigation Measures BIO-28 and BIO-31). The Proposed Project would not conflict with the provisions of any existing conservation easements, and no additional mitigation is required. This impact would be less than significant.”

The conservation easements held by SJCOG, Inc. prohibit ground disturbance of any kind within the easement area. To the extent the project disturbs a conservation easement held by SJCOG, Inc., it would result in a violation of the terms of the easement and would result in a significant and unavoidable impact.

6. Section 4.17.4 Biological Resources states in part, “The Proposed Project would not conflict with any local policies or ordinances protecting biological resources (Impact BIO-5) or with the provisions of an adopted habitat conservation plan (Impact BIO-6), and therefore would not contribute to cumulative impacts for these issues. Although the Project would cross several conservation easements, impacts within easements would be avoided to the extent feasible (Mitigation Measure BIO-2), and Western would comply with

B4-6

Comment Set B4, cont. San Joaquin Council of Governments

August 31, 2015
Page 4

all applicable requirements within conservation easements (Mitigation Measures BIO-28 and BIO-31). Therefore, the Proposed Project's incremental contribution to adverse cumulative impacts to conservation easements would not be considerable.

B4-6
cont.

The conservation easements held by SJCOG, Inc. prohibit ground disturbance of any kind within the easement area. To the extent the project disturbs a conservation easement held by SJCOG, Inc., it would result in a violation of the terms of the easement and would result in a significant and unavoidable impact.

As the agency charged with administering the SJMSCP and the conservation easements held pursuant to that plan, SJCOG, Inc. should be consulted prior to project approval to avoid impacts to existing conservation easements as any impacts to those easements cannot be minimized or mitigated.

B4-7

Thank you for the opportunity to comment on this project. We look forward to working with the Project Applicant.

Should you wish to discuss this further, please do not hesitate to contact the undersigned.

Very truly yours,



ROD A. ATTEBERY
Attorney at Law

cc: Steve Mayo, San Joaquin Council of Governments, Inc.

Comment Set B5 Northern California Power Agency



651 Commerce Drive
Roseville, CA 95678

(916) 781-3636

www.ncpa.com

September 3, 2015

Mr. Donald Lash
NEPA Document Manager
Western Area Power Administration
114 Parkshore Drive
Folsom, California 95630

SUBJECT: San Luis Transmission Project (SLTP) Draft EIS

Dear Mr. Lash:

Please include the following comments in the record for the proposed San Luis Transmission Project (SLTP) draft EIS on behalf of the Northern California Power Agency (NCPA):

NCPA's Members in total purchase about 40 percent of the Central Valley Project (CVP) power that is marketed by the Western Area Power Administration (Western). We therefore have a major interest in ensuring that CVP power remains economic and reliable; we have been actively participating with Western and Reclamation in various proceedings that may affect CVP transmission and power marketing and pricing.

We note that the San Luis Unit was authorized by Congress in Public Law 86-488 for the principal purpose of furnishing water for irrigation. Other incidental authorized purposes included fish and wildlife, recreation and municipal and domestic water (power is not an authorized purpose of the San Luis Unit). As a result, the costs of San Luis Unit of the CVP are assigned to Project Use. Accordingly, Reclamation and Western must continue to treat the San Luis Unit, including any future transmission for these facilities, as Project Use, regardless of the voltage option considered in the EIS for the SLTP transmission facilities.

Thank you for this opportunity to comment on the draft EIS for the SLTP. We appreciate the efforts that Western has been making to conduct a thorough and open NEPA process and look forward to continuing to work with Western on the many challenges facing CVP preference customers.

Sincerely,

RANDY S. HOWARD
General Manager
(916) 781-4200

cc: Subhash Paluru, Regional Manager

B5-1

Comment Set C1

Laura Sheppard and Beth Tackaberry

Public Meeting Comment Form

San Luis Transmission Project

Draft Environmental Impact Statement/Environmental Impact Report



Please use this form to record your comments on the Environmental Impact Statement (EIS)/Environmental Impact Report (EIR). Comments must be received by **August 31, 2015**, for consideration in the development of the Final EIS/EIR. You may submit your written comments in any of the following ways:

1) **At the Public Meeting:** Deposit this form in the comment box before leaving this meeting.

2) **By Mail:** Mail this form to:

Mr. Donald Lash, NEPA Document Manager
Western Area Power Administration, Sierra Nevada Region
114 Parkshore Drive
Folsom, CA 95630

3) **By Electronic Mail:** Email to SLTPEIS-EIR@wapa.gov

4) **By Fax:** Fax your comments, along with your name and address, to **916-353-4772**

Your name and address could be disclosed under the Freedom of Information Act (FOIA).

Name: Laura Sheppard | Beth Tackaberry 408 897 0062

Organization/Affiliation: _____ 18052 Del Puerto Canyon Rd

Address: 4235 East Ave | Livermore Ca 94550

City, State, Zip Code: Livermore, CA 94550

Comments: How will lines co-exist with farming or
Animals. How often will lines be maintained?

C1-1

Could power be pulled for personal use?

C1-2

Electrical Lines vs. Cancer.

C1-3

Access Road.

Beth@mgwater.com
Laura@mgwater.com

Parcel # 209 09 011

C1-4

my concern is making the Power Line area wider -
taking up more of our property. Can you go between the
Lines?

Visit www.SLTPEIS-EIR.com for project information.



Provide your mailing address to receive future notices about the San Luis Transmission Project EIS/EIR.

Comment Set C2
Beth Tackaberry

till aug 31

Public Meeting Comment Form

San Luis Transmission Project
Draft Environmental Impact Statement/Environmental Impact Report



Please use this form to record your comments on the Environmental Impact Statement (EIS)/Environmental Impact Report (EIR). Comments must be received by **August 31, 2015**, for consideration in the development of the Final EIS/EIR. You may submit your written comments in any of the following ways:

- 1) **At the Public Meeting:** Deposit this form in the comment box before leaving this meeting.
- 2) **By Mail:** Mail this form to:
Mr. Donald Lash, NEPA Document Manager
Western Area Power Administration, Sierra Nevada Region
114 Parkshore Drive
Folsom, CA 95630
- 3) **By Electronic Mail:** Email to SLTPEIS-EIR@wapa.gov
- 4) **By Fax:** Fax your comments, along with your name and address, to **916-353-4772**

Your name and address could be disclosed under the Freedom of Information Act (FOIA).

Name: Beth Tackaberry

Organization/Affiliation: _____

Address: 18052 Del Puerto Canyon Rd

City, State, Zip Code: Livermore Ca 94550

Comments: _____

When are these projects proposed to start & be completed?

C2-1

* Please try to move the lines west, so they go between the two and third line, not making them wider. (to the east)

C2-2

Parcel # 209 090 11

Beth

Visit www.SLTPEIS-EIR.com for project information.



Provide your mailing address to receive future notices about the San Luis Transmission Project EIS/EIR.

Comment Set C3 Jackson Family

Public Meeting Comment Form

San Luis Transmission Project
Draft Environmental Impact Statement/Environmental Impact Report



Please use this form to record your comments on the Environmental Impact Statement (EIS)/Environmental Impact Report (EIR). Comments must be received by **August 31, 2015**, for consideration in the development of the Final EIS/EIR. You may submit your written comments in any of the following ways:

- 1) **At the Public Meeting:** Deposit this form in the comment box before leaving this meeting.
- 2) **By Mail:** Mail this form to:
Mr. Donald Lash, NEPA Document Manager
Western Area Power Administration, Sierra Nevada Region
114 Parkshore Drive
Folsom, CA 95630
- 3) **By Electronic Mail:** Email to SLTPEIS-EIR@wapa.gov
- 4) **By Fax:** Fax your comments, along with your name and address, to **916-353-4772**

Your name and address could be disclosed under the Freedom of Information Act (FOIA).

Name: The Jackson Family

Organization/Affiliation: Jackson Land & Cattle, L.P.

Address: 6835 N. Vasco Rd.

City, State, Zip Code: Livermore CA 94550

Comments: _____

our first choice would to have the transmission lines
NOT go through our property.

Our second choice would be the alternative route
adjacent to the existing PG+E lines on the WEST side

The third choice would be the alternative route that adjacent
partially and not adjacent to the existing PG+E lines on the
WEST side.

The absolute worst choice is adjacent to the PG+E lines on the
east side ~~on the preferred route~~

The reason WAPA's green preferred route is the worst for our
family is because it is extremely close to our home and ranching
headquarters, it is almost over the top of us.

The parcels I am referring to is ~~the~~ ^{our} furthest NW parcel # 069180007
through our furthest SE parcel # 069240038.

Visit www.SLTPEIS-EIR.com for project information.

Respectfully submitted,

Denise Jackson Padgett
Marie Jackson



Provide your mailing address to receive future notices about the San Luis Transmission Project EIS/EIR.

C3-1

Comment Set C4

Dolores Kuhn 1

COMMENTS: Parcel 99B-7200-1 (63.9 Acres)

Cumulative impacts:

Four (4) existing electrical transmission lines (SLTP will make 5).

Cumulative impact affects agricultural resources making property incompatible with agriculture, transitioning property into an electrical facility.

Easements have taken 1600' ± road frontage on Kelso Road & 380' road frontage on Mtn. House Road.

Being enclosed on 3 sides by transmission lines – does this “cumulative effect” create a pocket of EMF’s?

Aesthetics:

Negative aesthetics has transformed rural farm agricultural ground into an electrical/substation environment. The project substantially degrades the quality of the environment.

Environmental effects:

EMF causing adverse effects on humans and animals either directly or indirectly, is still being debated but **we who are living it- believe it.** Increased voltage along existing transmission lines, might be expected to result in health effects for persons residing along these alignments.

The California Department of Education has established limits for locating any part of a school site property line near the edge of easement for high-voltage power transmission lines:

Electric power transmission lines maintained by power companies may or may not be hazardous to human health. Research continues on the effects of electromagnetic fields (EMF) on human beings. However, school districts should be cautious about the health and safety aspects relating to overhead transmission lines. School districts should take a conservative approach when reviewing sites situated near easements for power transmissions lines.

In consultation with the State Department of Health Services (DHS) and electric power companies, the Department has established limits for locating any part of a school site property line near the edge of easements for high-voltage power transmission lines.

<http://www.cde.ca.gov/ls/fa/sf/schoolsiteguide.asp#highvoltage>

We are also requesting information or research on the effects of an earthquake and transmission lines. The fear for ourselves and are livestock are great.

Historical Road:

Mountain House Road is a historical road - this project creates an unfavorable visual impact on our community.

C4-1

C4-2

C4-3

C4-4

C4-5

Comment Set C4, cont.

Dolores Kuhn 1

CONCLUSION

Our private contribution to the Public's energy needs began in 1993 when TANK acquired 6.57 acres of our private property by imminent domain. In 1995/96 MID & TID acquired 5.1 acres.

C4-6

We made these contributions to the "Public" while paying property taxes on the entire 64 acres. The SLTP projected route will acquire the little amount of open land that remains for us to utilize for our livelihood. **We do not receive electricity from any of the transmission line entities.**

The cumulative energy projects have a negative impact on our private property. Every tower and line limits the agricultural use, escalates to the EMF field, intensifies noise pollution, and lessens the property's esthetics. Our residence is encased by transmission lines. Crop Farming methods have to be altered to accommodate transmission lines i.e. crop dusting.

Escalated EMF fields add to the risks of cancer, a price that no human should be expected to pay for the "Public". The continued energy projects that run over our property and the community cause undue mental distress as we are frequently fighting to hold onto our livelihood and clean way of life.

C4-7

The loss of property value and profit bearing agriculture use has been depleted. We are solely limited to hay crops and permanent pasture. This property that we worked hard to preserve- that we would pass down to our children- has become a "transmission line" metropolis!

C4-8

SOLUTION: WAPA and San Luis Transmission should purchase our entire 63.9 acres.

C4-9

NOTE: In doing my own research on power line exposure & cancer I came across this article. It confirms our concerns.

C4-10

Exposure to Power Lines Linked to Cancer

After looking at a database of 850 patients diagnosed with lymphatic and bone marrow cancers between 1972 and 1980, researchers from the University of Tasmania and Britain's Bristol University found that living near high-voltage power lines might increase the risk of leukemia, lymphoma, and related conditions later in life.

People who lived within 328 yards of a power line up to the age of five were five times more likely to develop cancer. Those who lived within the same range to a power line at any point during their first 15 years were three times more likely to develop cancer as an adult.

Internal Medicine Journal September 2007; 37(9):614-9 Physorg.com August 24, 2007

<http://www.safespaceprotection.com/EMF-News-and-Info-Article/news-power-lines-linked-to-cancer.aspx>

Comment Set C5 Dolores Kuhn 2

COMMENTS: Castello Trust

CUMULATIVE IMPACTS:

On our property we have 2 canals, 3 pipelines, a proposed highway, 5 soon to be 6 transmission lines. It can't get more "cumulative" than that.

C5-1

We do **NOT** receive electricity, water, or oil from these entities.

Our personal contribution to the Public has been more than fulfilled.

We made these contributions to the "Public" while paying property taxes on the entire acreage.

Transmission lines have **visual and environmental effects** on existing agricultural practices. There is an increased **fire hazard** in areas with flammable brush and grass. Crop **Farming methods** have to be altered to accommodate transmission lines i.e. crop dusting.

There is still public concern that **electromagnetic fields** surrounding power lines have the potential to contribute to increased risk of cancer. While this topic is still being debated, increased voltage along existing transmission lines, might be expected to result in health effects for persons residing along these alignments.

C5-2

The California Department of Education has established limits for locating any part of a school site property line near the edge of easement for high-voltage power transmission lines:

Electric power transmission lines maintained by power companies may or may not be hazardous to human health. Research continues on the effects of electromagnetic fields (EMF) on human beings. However, school districts should be cautious about the health and safety aspects relating to overhead transmission lines. School districts should take a conservative approach when reviewing sites situated near easements for power transmissions lines.

In consultation with the State Department of Health Services (DHS) and electric power companies, the Department has established limits for locating any part of a school site property line near the edge of easements for high-voltage power transmission lines.

<http://www.cde.ca.gov/ls/fa/sf/schoolsiteguide.asp#highvoltage>

Noise levels will increase. Residing in the immediate vicinity of transmission lines we experience noise especially associated with wet weather.

C5-3

The **Historical Mountain House Road** will have added aesthetic effects.

C5-4

Property value is degraded and devalued by the presence of transmission line. Our property is being bombarded with utilities making it "a utility entity" rather than the ranch we inherited from our parents and we intended to pass on our children and grandchildren!

C5-5

Comment Set D1

Public Hearing – Los Banos

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

SAN LUIS TRANSMISSION PROJECT
DRAFT ENVIRONMENTAL IMPACT STATEMENT/ENVIRONMENTAL
IMPACT REPORT
PUBLIC MEETING

Tuesday, August 11, 2015
5:28 p.m. to 7:28 p.m.

LOS BANOS COMMUNITY CENTER
645 Seventh Street
Los Banos, California

Reported by: Karen A. Andasola, CSR 10919

Comment Set D1, cont.
Public Hearing – Los Banos

1 SPEAKERS:

2 KOJI KAWAMURA

3 TOM MURPHY

4 DENISE JACKSON PADDACK

5 MANDEEP BLING

6 LARRY FREEMAN

7 JOSEPH OLORIZ

8 BETH TACKABERRY

9 --oOo--

10

11 MR. KAWAMURA: All right. I'd like to welcome
12 everyone to the public meeting for Western Area Power
13 Administration's proposed San Luis Transmission Project.
14 We are currently in the National Environmental Policy
15 review, and as part of that process we held the scoping
16 meetings November of 2013 and we published the draft
17 environmental impact statement in July. And now we're
18 heading to public comments.

19 We had public comments yesterday, a hearing
20 yesterday in Tracy. We did not receive any comments,
21 verbal comments yesterday. We're hoping that we will be
22 receiving some written comments from that meeting. This
23 is our second and last of the public comment meetings
24 here in Los Banos, and we'd like to welcome everyone.

25 The purpose of this meeting is to try to solicit

Comment Set D1, cont.
Public Hearing – Los Banos

1 public comments, and that is one of the most important
2 processes of the National Environmental Policy Act, to
3 get the public input that goes into developing the draft
4 environment impact statement. It helps the decision
5 makers. It's a real important process.

6 Let me kind of introduce the participants here.
7 Tom Murphy is from Aspen Environmental. He's the
8 contractor which we hired to do most of the
9 environmental studies. And then he'll prepare those
10 reports and provide those to the decision makers. They
11 will make the decision.

12 This is a joint project with the Bureau of
13 Reclamation and with the San Luis Delta-Mendota Water
14 Authority. Western and the Reclamation district until
15 1977 were the reclamation operators of the Central
16 Valley project. In 1977, the power function transferred
17 to Western. And since that time Western and Reclamation
18 became independent agencies, but we have worked very
19 closely together.

20 What's driving this project is Western and
21 Reclamation had a contract with Pacific Gas & Electric
22 company. This has been a long-term contract, 50 years.
23 It's expiring next year. And as part of the expiration,
24 we went to PG&E to review the regulatory issues now so
25 they would be able to renew that contract with the state

Hill & McPherson

(209) 478-3377 or (800) 442-3377

3

Comment Set D1, cont.
Public Hearing – Los Banos

1 terms and conditions or even similar terms and
2 conditions. Because under the new regulatory, PG&E can
3 only offer service through the system operator. And as
4 a result of that, the water users rates were going to
5 increase substantially and there's going to be a lot of
6 cost uncertainty. And so Reclamation and the Authority
7 went to Western to see if there's a transmission option
8 to continue to transmit the power in a cost certain way
9 from Tracy down to San Luis. And that's the genesis of
10 this project.

11 And Tom here will go through and kind of give you
12 a detailed analysis of the environmental impacts and the
13 project a little bit. And with that, Tom, I'll go on
14 ahead and turn it over to you.

15 MR. MURPHY: Thank you. Can you hear me over
16 there? Thanks, Koji.

17 I'm Tom Murphy with Aspen Environmental Group.
18 We are the consultant that provided Western Area Power
19 Administration and the San Luis and Delta-Mendota Water
20 Authority with technical support in the preparation of
21 the draft environment impact report and impact statement
22 for the San Luis Transmission Project.

23 Tonight we wanted to share with you information
24 on the San Luis Transmission Project. We wanted to
25 describe the proposed project to you. We want to share

Comment Set D1, cont.
Public Hearing – Los Banos

1 with you why the proposed project is needed and we want
2 to summarize what we found during the EIS/EIR process.

3 The project overview is stated up there. Western
4 would construct, own, and maintain and operate
5 approximately 95 miles of transmission line. It's
6 primarily located adjacent to existing transmission
7 lines throughout those 95 miles and located in Alameda,
8 San Joaquin, Stanislaus, and Merced counties.

9 And here's a map of the project I just wanted to
10 go over with you. The project would start up here in
11 the Tracy area, Tracy substation, head down along
12 Interstate 5. There's an existing transmission
13 corridor, transmission lines along here to the west
14 along Interstate 5. The project would be located on the
15 east side of those lines adjacent to them. And they
16 would bypass the O'Neill substation, head into the Los
17 Banos substation. Then also there's a component of this
18 from the San Luis to Dos Amigos area right in here. And
19 I'll go into greater detail in a moment.

20 As Koji said, over the past 50 years Reclamation
21 has had a contract with PG&E to provide and transmit
22 power to San Luis. That contract will expire in March
23 of 2016. As a result, the Reclamation has been looking
24 at all options to transmit power to the San Luis project
25 in a reliable and a cost efficient manner. Reclamation

Comment Set D1, cont.
Public Hearing – Los Banos

1 believes a new transmission line meets these goals, and
2 as a result Reclamation has submitted a transmission
3 service request to Western to facilitate Reclamation's
4 continued delivery of federal water. We believe that
5 the SLTP would minimize increases to the Reclamation's
6 electricity cost.

7 Reclamation, Western, and the Authority has been
8 planning this project for a couple years, and during
9 that time an eligible transmission customer submitted a
10 separate transmission service request in the same area,
11 and this SLTP project would address both of those
12 service requests to Western.

13 As described earlier, Western, Reclamation, and
14 the Authority spent a great deal of time designing the
15 San Luis Transmission Project. Western designed this
16 project to meet these five objectives. I'm going to
17 read them word for word. They're very important.

18 To obtain durable long-term cost certain and
19 efficient transmission delivery of the Central Valley
20 project power from federal power generation sites to the
21 major pumping stations of the San Luis unit, to reliably
22 deliver water to Reclamation and the Authority member
23 agencies, to locate and install transmission facilities
24 in a safety, efficient, and cost-effective manner that
25 meets project needs while minimizing environmental

Comment Set D1, cont.
Public Hearing – Los Banos

1 impacts, to locate facilities to minimize a potential of
2 environmental impacts from external sources, to maximize
3 the use of existing transmission corridors or
4 rights-of-way in order to minimize the effects on
5 previously undisturbed land and resources, and to obtain
6 stable and reliable transmission that meets project
7 needs in a cost-effective and timely manner.

8 I wanted to go into the project in a little bit
9 more detail. It's a little bit complicated project. It
10 has many different components. I broke the project up
11 into several different components. The first is the 500
12 kV component. It would install and construct a new 500
13 kV transmission approximately -- a transmission line
14 approximately 65 miles in length between Tracy and the
15 Los Banos substation.

16 In order to do that we would have to construct
17 two new substations, one at Tracy called -- it's named
18 the Tracy East Substation and one at the Los Banos area
19 called the Los Banos Area West Substation.

20 In addition, Western would interconnect the
21 existing 500 kV Los Banos gauge number 3 transmission
22 line into the Los Banos West Substation. Let me go over
23 the map with you on that. Again, it's the same map.
24 Here's the Tracy East Substation just located east of
25 the existing Tracy substation. This red line represents

Comment Set D1, cont.
Public Hearing – Los Banos

1 the proposed project. It would be located basically
2 from this point down in here adjacent to those existing
3 transmission lines that you see on Interstate 5 as
4 you're traveling along Interstate 5. That 500 kV line
5 would go around the O'Neill Substation and head into
6 this new Los Banos West Substation located right here.
7 And that's just west of the existing Los Banos
8 substation.

9 The second component is the 230 kV lines.
10 There's two parts of that. The first part is a
11 three-mile long transmission line between the Los Banos
12 West Substation and the existing San Luis substation.
13 The second part of that is a new 230 kV transmission
14 line between the San Luis substation or there's two
15 options there. Either coming out of the San Luis
16 substation or the Los Banos substation and heading down
17 to Dos Amigos.

18 If it was between the San Luis substation and the
19 Dos Amigos substation, it would probably be
20 approximately 20 miles in length between Los Banos and
21 Dos Amigos approximately. Let me go over the map with
22 you on that. The first part of that was a three-mile
23 line. Here's the Los Banos substation right here. The
24 230 kV line from this point over to San Luis. That's
25 the first component of it. And then there was the

Comment Set D1, cont.
Public Hearing – Los Banos

1 second component of either starting at San Luis or
2 starting at Los Banos, but heading from this point down
3 to Dos Amigos substation right in here.

4 Some of the other components associated with the
5 project. There's a new 70 kV transmission line
6 approximately seven miles in length between the San Luis
7 and O'Neill substations. They need to modify the
8 existing San Luis and Dos Amigos substations. They need
9 to add and improve communication facilities, improve
10 existing and permanent access roads both for operation
11 of maintenance and for construction.

12 And let me show you where that 740 kV line is.
13 This yellow line right here from San Luis south of the
14 O'Neill Forebay, east of the O'Neill Forebay, up into
15 the O'Neill substation right here. That would be a 70
16 kV line.

17 In addition to the transmission components
18 associated with the San Luis Transmission Project,
19 Western is also looking at voltage options for this
20 project. These voltage options are dependent on whether
21 the eligible transmission customer continues with the
22 San Luis Transmission Project or not. Those voltage
23 options are the following. They would construct the 500
24 kV transmission component which we talked about, but
25 only operated at 230 kV between Tracy and San Luis.

Comment Set D1, cont.
Public Hearing – Los Banos

1 The second option is not to build a 500 kV line,
2 but to build a 230 kV transmission line from Tracy all
3 the way down to San Luis. As you can see, if it is
4 built at 230 from Tracy to Los Banos and north, they
5 would not need the two 500 kV substations which we
6 talked about, the Tracy East Substation and the Los
7 Banos West Substation.

8 At the beginning of the EIS/EIR process we
9 developed alternatives based on public comments we
10 received during the scoping period and from our analysts
11 evaluating the project. In order to fairly compare the
12 proposed project to the alternatives, we had to break
13 the project into four segments so we could compare them
14 equally. And we named them north, central, San Luis,
15 and south.

16 Seven of those 13 corridor alternatives were
17 screened out because they didn't meet one of the
18 following criteria: meet project objectives, was
19 technically feasible, or had the potential to reduce
20 impacts from the proposed project.

21 I just wanted to briefly go over those
22 alternatives with you, the six that remained and were
23 evaluated in the EIS/EIR. The six corridor alternatives
24 were in looking at the first one, the north segment, we
25 didn't find a viable alternative that we could bring

Comment Set D1, cont.
Public Hearing – Los Banos

1 forward in the EIS/EIR.

2 We looked at several. In the central segment we
3 do have an alternative that we brought forward. We call
4 it the Patterson Pass corridor alternative, and that --
5 in that area in the central -- central segment, again
6 it's that proposed project is running on the east side
7 of those existing transmission lines that you can see
8 from Interstate 5. The Patterson Pass Road alternative
9 would be on the west side of those transmission lines
10 adjacent to and parallel to the proposed project and
11 those transmission lines.

12 We also identified two alternatives in the San
13 Luis segment, Butts Road and west of cemetery. As you
14 remember in the -- down by San Luis, the proposed
15 project goes on the east side of the O'Neill Forebay.
16 We identified two additional alternatives that were on
17 the west side of the O'Neill Forebay. On the south
18 segment, there was -- we also identified two
19 alternatives as well. From the Los Banos area down to
20 Dos Amigos, the proposed project would be on the east
21 side of existing transmission lines. We identified an
22 alternative to that, and that's the San Luis to Dos
23 Amigos alternative. And that would be on the west side
24 of those existing transmission lines. There's one other
25 one we identified from the south, and that's the Billy

Comment Set D1, cont.
Public Hearing – Los Banos

1 Wright Road. That would parallel Billy Wright Road down
2 to a point, and the project alternative would come back
3 into the proposed project corridor.

4 For the 70 kV one, we also looked at a number of
5 different options. We identified an alternative for
6 that. As you remember, the 70 kV line for the proposed
7 project is on the east side of the O'Neill Forebay. We
8 looked at a route that would be on the west side of that
9 O'Neill Forebay. So all six of these corridor
10 alternatives were evaluated in the EIS/EIR along with
11 the no action/no project alternative, and that would be
12 where the San Luis Transmission Project would not be
13 built.

14 Let me just show you real quickly those routes
15 that we just talked about. The north segment's up here.
16 We didn't find a viable alternative to bring forward in
17 the EIS/EIR. The Patterson Pass Road would follow this
18 line which is the proposed project. Again it would be
19 on the west side versus the east side of those existing
20 transmission lines. As you -- and then you get down
21 into the San Luis segment right here. As you can see
22 the proposed project is on the east side of the O'Neill
23 Forebay. We identified two. Butts Road, which is right
24 here, and west of the cemetery which is right here west
25 of the O'Neill Forebay.

Comment Set D1, cont.
Public Hearing – Los Banos

1 And then when you get down into the south
2 segment, we identified two as well. Again, that's the
3 proposed project. It's on the east side of existing
4 transmission lines. The San Luis to Dos Amigos would be
5 on the west side paralleling that line right there, and
6 the Billy Wright Road alternative is this gray line
7 right here.

8 So besides looking at all the alternatives and
9 developing the alternatives and going through the
10 screening process, we brought the proposed project and
11 all the alternatives and the no project/no action
12 through 15 resource -- evaluated them through 15
13 resource areas for the draft EIS/EIR including
14 agricultural, air quality, cultural resources, traffic,
15 water, visual, and many more.

16 Besides that we also conducted very detailed
17 surveys out in the field, biological resource surveys,
18 cultural resource surveys, as well as visual inspections
19 at key observation points. And those are generally
20 around the National Cemetery.

21 So in conclusion, the EIS/EIR found significant
22 impacts in three resource areas, and they are
23 recreation, land use, and noise. The recreation and
24 land use had to do with the proposed Los Banos West
25 Substation. For recreation we found that the Los Banos

Comment Set D1, cont.
Public Hearing – Los Banos

1 West Substation would result in conflicts with physical
2 alterations of and decreased accessibility of the Jasper
3 Sears OHV which is just west of the Los Banos
4 Substation.

5 For the land use we found that the Los Banos West
6 Substation would result in conflicts with the San Luis
7 Reservoir State Recreation Area Resource Management
8 Plan/General Plan as it pertains to the Jasper Sears OHV
9 use area.

10 For construction it was -- primarily focused --
11 or for noise it primarily focused on construction
12 activities that were temporary in nature. But the
13 construction would result in more than a five decibel
14 increase intermittently at sensitive receptors near the
15 project which would temporarily exceed local noise
16 standards near residents throughout the project area.
17 All other impacts were determined to be less than
18 significant with or without mitigation measures.

19 And finally for the environmentally preferred
20 alternative we identified per segment. In order to be
21 equal and fair, we identified for the north segment the
22 proposed project which we discussed. For the central
23 segment we identified the Patterson Pass alternative.
24 For the San Luis segment we identified the proposed
25 project as the environmentally preferred alternative.

Comment Set D1, cont.
Public Hearing – Los Banos

1 And for the south segment, it was the San Luis to the
2 Dos Amigos alternative.

3 And if you notice the Patterson Pass Road
4 alternative and the San Luis to Dos Amigos alternative,
5 both have one thing in common. They're both on the west
6 side of the existing transmission lines and not on the
7 east side. The San Luis segment, the 70 kV line, we
8 found that the proposed project was the environmentally
9 preferred alternative.

10 And at this point both Western and the Authority
11 have not identified the agency's preferred alternative.
12 They really want to get the document out in the street
13 and have it reviewed by the public, receive comments
14 back, receive concerns before they identify their
15 agency's preferred alternative. That will occur when we
16 issue the final EIS/EIR.

17 And with that, I turn it over to Koji to move
18 into more formal public comment period of the San Luis
19 Transmission Project.

20 MR. KAWAMURA: Thank you, Tom. Are there any
21 questions for Tom?

22 MS. JACKSON PADDACK: I have a question. Who is
23 the eligible transmission customer?

24 MR. KAWAMURA: Yeah, the -- under the Western --
25 is this on? Okay. Under Western's standard policies

Comment Set D1, cont.
Public Hearing – Los Banos

1 for open access transmission service, what we have is
2 there is a transmission service request that comes in.
3 It comes into a computer system, and then it cues in on
4 when they come to those requests. For market sensitive
5 purposes at this point in time until the project is
6 either buildable or not build or the customer decides
7 whether to participate or not, they're confidential for
8 business sensitive reasons at this point in time.

9 MS. JACKSON PADDACK: Basically it could be just
10 -- they're one of the key drivers. You think you could
11 tell us.

12 MR. KAWAMURA: The project is going to be built
13 either at a 230 or a 500. And for the 500, it would
14 only be built at a 500 if they participate. And so it
15 will still be built at the 230 -- if the project
16 proceeds, it would still be proposed at 230 if they
17 don't participate.

18 MS. JACKSON PADDACK: Even though it's a
19 public -- it's a public deal, they can't --

20 MR. KAWAMURA: It's just the market sensitive --
21 a lot of times what happens is there is a lot of
22 competing interest in transmission services request, and
23 by one entity making a transmission request, they're
24 concerned that there will be other entities who would --
25 competitors who may come in also. And so as a result,

Comment Set D1, cont.
Public Hearing – Los Banos

1 until that's finalized, SNR's policy is not to reveal
2 those names.

3 All right. Before we actually go into the public
4 comments, I just want to let everyone know that
5 everything being said here is transcribed and becomes
6 part of the official record. The official record is
7 maintained at Western's offices. So if anyone would
8 like to take a look at it, feel free to contact Don Lash
9 who you can get copies of -- come in and see it or there
10 are copies of environmental impact statement/environment
11 impact report on the website. So that's a really good
12 site if you want further information.

13 Now with the comments, you can provide comments
14 any time before August 31st. The comment period closes
15 on August 31st. We take comments via mail, fax, or
16 email. The address would be -- mailing address is 114
17 Parkshore Drive, Folsom, California, 95630. You can
18 address the comments to Mr. Donald Lash and you can
19 email it to SLTPEIS-EIR@wapa.gov or you can fax it to
20 (916) 353-4472. And as long as we get those before
21 August 31st, they will be considered.

22 You can also provide verbal comments tonight, and
23 like I said will become part of the official record.
24 And with that I'm going to go on ahead and open up the
25 floor for comments. I received two comment cards

Comment Set D1, cont.
Public Hearing – Los Banos

1 indicating the two speakers want to provide comments
2 tonight. If you do want to provide comments tonight
3 verbally, you can. I'll go ahead and have you introduce
4 yourself after these first two folks go.

5 First speaker is from the Department of Water
6 Resources, and it is Mr. Bling.

7 MR. BLING: Good evening. My name is Mandeep
8 Bling with DWR, Department of Water Resources you may
9 know of. I have some comments here. They are from
10 actually my management, so I'm just going to make a
11 brief -- if I can read them.

12 MR. KAWAMURA: Yes, fine. Thank you.

13 MR. BLING: DWR will be filing written comments
14 before the deadline of course. The DWR is the operator
15 and maintainer of the facilities including the San Luis
16 unit substation. Dos Amigos unit substation in
17 accordance with the congressionally ratified joint use
18 facilities agreement with the U.S. Bureau of
19 Reclamation. Per that agreement, connecting the
20 proposed SLTP to those aforementioned joint use
21 facilities will require DWR concurrence.

22 As such, the proposed action DWR has been
23 recognized as a cooperating and responsible agency in
24 the draft EIS/EIR and aforementioned consultation prior
25 to the issuance of their draft EIR. Board time may be

D1-1

D1-2

Comment Set D1, cont.
Public Hearing – Los Banos

1 required more than 30 days for DWR to perform a thorough
2 and detailed review.

3 So as I mentioned we will -- there will be some
4 written comments that will be mailed to you. So there's
5 more to come on that.

6 MR. KAWAMURA: Okay.

7 MR. BLING: That's all we have right now.

8 MR. KAWAMURA: Thank you. I appreciate your
9 time.

10 The next comment is Mr. Freeman, a landowner.

11 MR FREEMAN: Sure. I'm not very good at public
12 commenting. As Francis knows I'm very blunt and to the
13 point. My brother and I have inherited 700 acres from
14 our father right in this area. The transmission lines
15 go right through us. I guess the only thing I would
16 like to say is if it's possible that -- and I know the
17 alternatives, I know the routes. I just don't like to
18 see any larger footprint running right through our ranch
19 than the size it is now.

20 If it would be existing built n and expanded on
21 what's there, build it bigger, fine. I want to be able
22 to enjoy my ranch the size that it is now and not have
23 to worry about an existing path going one way or the
24 other.

25 All three alternative routes would be on the east

D1-2
cont.

D1-3

Comment Set D1, cont.
Public Hearing – Los Banos

1 side. West side goes through me. The other alternative
2 route going Billy Wright Road borders us as well. I
3 don't know how to say this, but I'm not in favor of any
4 of it. I want to be able to pass this land on to my
5 grandchildren and pass it on to our families, and
6 putting a substation line through it, I'm not in favor
7 of.

D1-3
cont.

8 With that said, I am the water master for the San
9 Joaquin River Exchange Contractors Water Authority. I
10 understand and thoroughly understand the need and why we
11 must have in this project. I thoroughly understand it.
12 It's something that we have to do. So I understand
13 both -- I feel both sides. I feel it for both. I don't
14 know what else I can say other than thank you. Thank
15 you for the time.

D1-4

16 MR. KAWAMURA: Certainly. Thank you for those
17 comments. Is there anyone --

18 MS. JACKSON PADDACK: I don't want to stand up
19 and speak, but can the lines be on the existing towers?

D1-5

20 MR. KAWAMURA: I will let -- let our -- some of
21 our engineers address that, but -- is Joe here? Do you
22 want to talk about using existing towers?

23 MR. OLORIZ: So what is your question as far as
24 using existing lines that are --

25 MS. JACKSON PADDACK: Can you use existing towers

Comment Set D1, cont.
Public Hearing – Los Banos

1 that are already there and add additional lines or can
2 you increase the lines to make it handle more?

D1-5
cont.

3 MR. OLORIZ: To the existing PD towers that are
4 out there, my understanding is no, we cannot add any
5 more circuits to the existing towers.

6 MS. JACKSON PADDACK: Or lines?

7 MR. OLORIZ: Or lines.

8 MS. JACKSON PADDACK: Leaving the towers, I mean,
9 is that even possible?

10 MR. OLORIZ: Modifying existing towers?

11 MR. FREEMAN: Modifying, building new to
12 accommodate that.

13 MR. OLORIZ: That's not something that's in the
14 study, but typically not. But I can't answer that
15 definitively.

16 MS. JACKSON PADDACK: What about instead of going
17 to the side of them, going in between them?

D1-6

18 MR. KAWAMURA: We probably should have some names
19 with the speakers, so just -- just so the record is a
20 little bit cleaner. So, I'm sorry, if you can just
21 provide your name for the court reporter.

22 MS. JACKSON PADDACK: Denise Jackson Paddack.

23 MS. TACKABERRY: I'm Beth Tackaberry. Beth
24 Tackaberry. I would like to see the lines go between
25 the towers, not outside the lines, if they got to go.

Comment Set D1, cont.
Public Hearing – Los Banos

1 MR. OLORIZ: Right. And then there's clearance
2 requirements that would prevent us from being able to do
3 that. There's minimum right-of-way widths that we have
4 depending on the voltage of line. So unfortunately
5 that's -- that's not a possibility. There is -- I
6 believe there are three or four lines out there existing
7 right now. Your property is two, I believe, that are
8 going through.

9 MS. TACKABERRY: And there's three sets of
10 towers.

11 MR. OLORIZ: Right, right. And the two that are
12 adjacent to each other, those, as is my understanding,
13 is a minimum width.

14 MS. TACKABERRY: (Nods head.)

15 MR. OLORIZ: So we could not --

16 MS. TACKABERRY: Well, what about the one on my
17 border, between that one and the other two? Because
18 there's plenty of room there, rather than making it
19 wider.

20 MR. OLORIZ: And that was to the west I believe?
21 I'm trying to remember your parcel, but I believe it's
22 -- you're saying move that the project area to the west?

23 MS. TACKABERRY: Yes.

24 MR. OLORIZ: And you can submit that as a comment
25 and we can --

D1-6
cont.

D1-7

Comment Set D1, cont.
Public Hearing – Los Banos

1 MS. TACKABERRY: Yes.

2 MR. OLORIZ: That would be definitely looked
3 into.

4 MR. MURPHY: Joe, can you summarize that real
5 quick?

6 MR. OLORIZ: The comment was if we could relocate
7 basically the project corridor area to the west of
8 existing of what we're proposing right now adjacent --

9 MR. MURPHY: Of her property.

10 MR. OLORIZ: Of her property, correct. Right.

11 MR. KAWAMURA: Thank you, Joe. And if you could
12 submit those comments, that would be greatly
13 appreciated.

14 Are there any other comments?

15 (No response.)

16 MR. KAWAMURA: All right. If not, I'm going
17 to -- if you guys change your minds, feel free to submit
18 written comments by August 31st. We do look forward to
19 any type of written comments that you may have, and a
20 lot times it's easier to provide comments because you
21 can sit down, think about it, and write a letter and it
22 makes a lot more sense to you when you're writing a
23 letter than trying to speak off the cuff. So we do
24 appreciate this.

25 As part of the EIS/EIR process, the public

D1-7
cont.

Comment Set D1, cont.
Public Hearing – Los Banos

1 comments is one of the most important aspects of the
2 National Environmental Protection Act and the California
3 Environment Quality Act, and so any type of comments
4 that you guys can provide would be greatly appreciated.
5 We will consider all of those comments as part of the
6 final EIS/EIR that will be published sometime next year.

7 We appreciate everyone who attended. We do
8 understand that you are taking a lot of time out of your
9 day to come here, and we thank you for that. So thank
10 you. And if you guys have any questions, our staff will
11 be around for a while. Feel free to talk to anyone and
12 we look forward to your comments in this process. Thank
13 you.

14 (Recess from 6:00 p.m. to 7:27 p.m.)

15 MR. KAWAMURA: I'm going to adjourn the public
16 comment hearings. And the public comments are still
17 available and can be submitted through August 31st.
18 Until that time we look forward to hearing public
19 comments that we get and we will consider those as part
20 of the record and we'll address those as part of the
21 final EIS/EIR.

22 Thank you for attending, and the public comment
23 forums are adjourned.

24 (Time noted: 7:28 p.m.)
25

Comment Set D1, cont.
Public Hearing – Los Banos

1 STATE OF CALIFORNIA,)

2)

3 COUNTY OF SAN JOAQUIN.)

4

5 I, KAREN A. ANDASOLA, a Certified Shorthand
6 Reporter in and for the County of San Joaquin, State of
7 California, do hereby certify;

8 That on August 11, 2015, thereof, I reported
9 verbatim in shorthand writing the foregoing proceedings;

10 That I thereafter caused my shorthand writing to
11 be reduced to typewriting, and that the foregoing
12 transcript constitutes a full, true, and correct
13 transcription of all proceedings had and given.

14 IN WITNESS HEREOF, I have hereunto set my hand
15 and affixed my Official Seal this 24th day of August,
16 2015.

17

18

19

20 KAREN A. ANDASOLA, CSR #10919

21 Certified Shorthand Reporter

22

23

24

25

Appendix M

Draft Conformity Determination

Draft Conformity Determination for the San Luis Transmission Project

The Western Area Power Administration (Western) and the San Luis & Delta-Mendota Water Authority (Authority) are accepting comments on this Draft Conformity Determination during the next 30 days. Written comments can be provided by mail, email, or fax at the addresses listed below by April 25, 2016.

Mail: Mr. Donald Lash, NEPA Document Manager
Western Area Power Administration, Sierra Nevada Region
114 Parkshore Drive
Folsom, CA 95630

Email: SLTPEIS-EIR@wapa.gov

Fax: (916) 353-4772

1. Introduction and Summary

Section 176(c)(1) of the federal Clean Air Act (CAA) requires any agency within the Federal Government that engages in, supports, or in any way provides financial support for, licenses, or permits, or approves any activity, to demonstrate that the action conforms to the applicable State Implementation Plan (SIP) for achieving and maintaining the National Ambient Air Quality Standards (NAAQS) for criteria pollutants before the action is otherwise approved (General Conformity rule).

Western, a power marketing administration within the U.S. Department of Energy (DOE), and the Authority, a California joint powers agency, prepared a Draft Environmental Impact Statement (EIS)/Environmental Impact Report (EIR) for the proposed San Luis Transmission Project (SLTP). Western is the federal lead agency under the National Environmental Policy Act (NEPA), and the Authority is the State lead agency under the California Environmental Quality Act (CEQA). The Bureau of Reclamation (Reclamation) is a Cooperating Agency. The California Department of Water Resources is a Responsible Agency.

The SLTP, if approved, would cause emissions of ozone precursors from sources that would be located in portions of California that do not attain the NAAQS for ozone. Because Western proposes to construct, operate, and maintain the SLTP, the action will be subject to the requirements of the federal Clean Air Act General Conformity rule for all nonattainment and maintenance areas affected by the direct and indirect emissions from the SLTP. This evaluation of General Conformity was performed for the affected nonattainment and maintenance areas in the San Joaquin Valley Air Basin (SJVAB) and the San Francisco Bay Area Air Basin. Criteria pollutant emissions generated in each area from activities associated with SLTP construction and operation were estimated and compared to the General Conformity *de minimis* thresholds to assess whether a conformity determination is required.

The Draft EIS/EIR released by Western in July 2015 indicated that project-related emissions of nitrogen oxides (NO_x) could exceed the General Conformity rule threshold rate applicable in the San Joaquin Valley Air Basin. Other criteria pollutant emissions would not occur at levels exceeding the threshold rates in either the SJVAB or the San Francisco Bay Area Air Basin. Because construction emissions of NO_x would exceed the General Conformity threshold in years 2018 and 2019 in the SJVAB, the SLTP requires a General

Conformity evaluation, and Western must make a conformity determination for NO_x emitted during construction.

This evaluation finds that the total of direct and indirect emissions from the SLTP will conform to the approved SIP because the ozone precursor emissions of NO_x, which are subject to the conformity requirements, will be fully offset by reducing emissions of the same pollutant in the same nonattainment area. To achieve this, Western will fully offset its construction-phase NO_x emissions through an enforceable measure that effects emissions reductions equal to or greater than the total of direct and indirect emissions from the action so that there is no net increase in NO_x emissions.¹

2. General Conformity Requirements

The General Conformity rule is codified in 40 Code of Federal Regulations (CFR) Part 93 (40 CFR 93), Subpart B, "Determining Conformity of General Federal Actions to State or Federal Implementation Plans." The General Conformity rule applies to all federal actions, except transportation-related programs and projects, which are subject to a separate rule promulgated by the U.S. Department of Transportation (U.S. DOT).

As defined in the CAA, Title I, Section 176(c)(1), conformity means to uphold air quality goals for the purpose of eliminating or reducing the severity and number of violations of the NAAQS and achieving expeditious attainment of the NAAQS. Accordingly, a proposed action or activity achieves conformity if the associated pollutant emissions would not:

- Cause or contribute to new violations of any NAAQS in any area;
- Increase the frequency or severity of any existing violation of any NAAQS in any area; or
- Delay timely attainment of any NAAQS or interim emission reductions or other milestones in any area.

The General Conformity rule and associated guidance from the U.S. EPA (2010) and U.S. DOE (2000) establish the terms and procedures to be used in determining conformity. To summarize, in making a conformity determination, the federal agency must:

- Follow certain reporting [§93.155] and public notice [§93.156] requirements and must consider the comments from any interested parties;
- Demonstrate that one or more criteria for determining conformity are satisfied [§93.158];
- Follow specified procedures in preparing the analysis [§93.159]; and
- Identify the measures necessary to mitigate impacts and the implementation schedule [§§93.160 and 93.163].

The federal General Conformity rule is also incorporated into local regulations. For instance, in 1994, the San Joaquin Valley Air Pollution Control District (SJVAPCD) adopted the federal General Conformity regulations within its Rule 9110, General Conformity. Although the federal General Conformity rule was updated by U.S. EPA in 2010, the SJVAPCD Rule 9110 includes the provisions that were established by U.S. EPA in 1994. Although it is outdated, the version of SJVAPCD Rule 9110 that was adopted by the SJVAPCD on October 20, 1994 was included in the SIP (April 23, 1999; 64 FR 19916). This General Conformity evaluation follows the federal requirements and procedures established in the version of the General Conformity rule (40 CFR 93 Subpart B) most recently revised by U.S. EPA on April 5, 2010 (75 FR 17254) and effective July 6, 2010.

¹ As specified by 40 CFR 93.158(a)(5)(iii).

2.1 Criteria for Determining Conformity

The regulations allow several different ways of determining conformity [§93.158], including through comparisons with the emission budgets in the SIP, creating emissions offsets, or air quality modeling. Conformity can be demonstrated for a project if:

- The emissions are specifically identified and accounted for in the SIP;
- The State agency responsible for the SIP determines that the total emissions from the action, along with all other emissions in the area, will not exceed the SIP emission budget;
- The State makes a written commitment to revise the SIP to include the emissions from the action;
- The Metropolitan Planning Organization for the area determines that the emissions are included in the transportation plan or transportation improvement plan;
- The emissions are fully offset by the reduction of emissions in the same nonattainment or maintenance area, or nearby area of equal or higher classification if the emissions impact the nonattainment or maintenance area; or
- Air quality modeling demonstrates that the emissions will not cause or contribute to new violations of the standards or increase the frequency or severity of any existing violations of the standards.

2.2 Procedures for Conformity Analyses

The regulations specify the procedures to be used in each analysis of conformity [§93.159]. The evaluation must be:

- Based on the latest planning assumptions;
- Based on the latest and most accurate emission estimation techniques available; and
- Based on the total of direct and indirect emissions from the action and must reflect emission scenarios that are expected to occur during: the attainment year specified in the SIP; the last year for which emissions are projected in the maintenance plan; or the year during which the total of direct and indirect emissions from the action is expected to be the greatest on an annual basis.

2.3 Reporting and Public Participation

The regulations require Western to follow certain reporting [§93.155] and public notice [§93.156] requirements. The draft conformity determination must be available for 30 days of public comment, and Western must consider the comments on the draft conformity determination that are made by any interested party. The comments and responses to all the comments received on the draft conformity determination must be available upon request within 30 days of release of the final conformity determination.

3. Project Description

Western proposes to construct, own, operate, and maintain approximately 95 miles of new transmission lines within easements ranging from 125 to 250 feet wide through Alameda, San Joaquin, Stanislaus, and Merced Counties along the foothills of the Diablo Range in the western San Joaquin Valley. Western also would upgrade or expand its existing substations, make the necessary arrangements to upgrade or expand existing high-voltage substations, or construct new substations to accommodate the interconnections of these new transmission lines.

The Final EIS/EIR Chapter 2 (Description of the Proposed Project and Alternatives) provides additional detail and defines an Agency Preferred Alternative. The conformity determination is only required for the federal agency-approved alternative. This Draft Conformity Determination for the SLTP is based on the Agency Preferred Alternative, which comprises the Proposed Project in the North, Central and San Luis Segments and the Billy Wright Road Alternative in the South Segment.

4. Project Emissions

The greatest annual rates of emissions caused by the SLTP would be during construction, which would occur during 2018, 2019, and 2020, based on the current construction plan described in Final EIS/EIR Section 2.1.3 (assumptions are presented in Final EIS/EIR Appendix I, Air Quality Emission Calculations).

All project-related emissions are quantified based on the best available forecast of activities. This analysis uses the California Emissions Estimator Model (CalEEMod; version 2013.2.2) software developed by the California Air Pollution Control Officers Association (CAPCOA). This is the most recent version of the CalEEMod software, and it relies on mobile source emission factors from the Air Resources Board (ARB) OFFROAD inventory and EMFAC2011 models. Where project-specific parameters are not yet defined, default and typical settings from CalEEMod are used. Default emission factors used in this analysis appear in the CalEEMod User's Guide Appendix D (July 2013).

The Final EIS/EIR (Appendix I) includes detailed air quality emission calculations and the CalEEMod output reports.

4.1 Construction Emissions

The geophysical location of construction emissions and all alternatives would occur in the San Joaquin Valley Air Basin, and only a limited portion of the emissions related to construction of the new Tracy East Substation would occur in the jurisdiction of the Bay Area Air Quality Management District (BAAQMD), adjacent to the SJVAPCD boundary. Construction emissions would not exceed the General Conformity rule thresholds that apply in the BAAQMD or be likely to contribute to violations of air quality standards in the BAAQMD.

Based on the preliminary estimate of total construction emissions shown in the Final EIS/EIR and in the following Table M-1 (Estimated Construction-Phase Emissions), construction emissions could exceed the NO_x threshold for General Conformity in the SJVAB.

Table M-1. Estimated Construction-Phase Emissions (tons per year)

Proposed Project Totals (by Calendar Year)	NO_x	VOC	PM₁₀	PM_{2.5}	CO
Off-Road Equipment	23.5	1.2	4.8	3.0	28.7
On-Road Vehicles	2.6	0.4	25.1	2.6	5.0
Year 1 (2018)	26.1	1.6	29.9	5.6	33.7
Off-Road Equipment	23.5	1.2	5.6	3.3	28.5
On-Road Vehicles	2.5	0.4	33.6	3.5	5.0
Year 2 (2019)	26.0	1.5	39.1	6.8	33.6
Off-Road Equipment	3.5	0.2	0.9	0.5	4.1
On-Road Vehicles	0.4	0.1	8.8	0.9	0.7
Aircraft	2.7	3.3	0.1	0.1	4.1
Year 3 (2020)	6.6	3.5	9.7	1.5	9.0
Proposed Project Totals (all years)	58.8	6.6	78.8	14.0	76.2

Table M-1. Estimated Construction-Phase Emissions (tons per year)

Proposed Project Totals (by Calendar Year)	NOx	VOC	PM10	PM2.5	CO
Billy Wright Road Alternative (additional to Proposed Project)	1.0	0.2	2.3	0.3	1.3
Agency Preferred Alternative Totals (all years)	59.7	6.8	81.1	14.3	77.5
General Conformity Threshold for San Joaquin Valley Air Basin	10	10	100	100	—
Does Proposed Project or Agency Preferred Alternative Potentially Exceed Conformity Threshold?	Yes	No	No	No	—

Source: Final EIS/EIR Appendix I.

Note: "—" means no threshold applies.

Constructing all segments of the SLTP simultaneously, while unlikely, could result in an exceedance of the General Conformity rule applicability threshold for NOx in the region. Details supporting the air quality emission calculations are presented in the Final EIS/EIR (Appendix I).

4.2 Operation Emissions

During operation, the SLTP would involve routine inspection and maintenance requirements that would not notably increase emissions. The negligible normal operating emissions would comply with SJVAPCD rules and regulations. Therefore, it has been determined that the normal operating emissions do not trigger further general conformity analysis. Details supporting the air quality emission calculations are presented in the Final EIS/EIR (Appendix I).

5. Status of Applicable State Implementation Plans

The federal Clean Air Act requires each ozone nonattainment area to develop an emission inventory as the basis of a SIP that demonstrates how the area will attain the standards by specified dates or maintain attainment. This discussion discusses recent ozone plans and the relevant NOx inventories.

Each applicable SIP includes a planning forecast horizon year and emissions inventory for the forecast attainment year. Historically, ozone planning requirements focused on attaining the federal 1-hour ozone standard that was revoked in 2005, and these plans remain partially in place. Current and upcoming planning efforts focus on attaining an 8-hour ozone standard that is more human health protective than the 1-hour ozone standard.

2004 1-hour Ozone Plan and 2014 Attainment Demonstration Request

In the SJVAPCD jurisdiction, U.S. EPA approved the 2004 Extreme Ozone Attainment Demonstration Plan for 1-hour ozone on March 8, 2010. However, U.S. EPA later withdrew the approval on November 9, 2012. Although the 2004 Extreme Ozone Attainment Plan is based on the federal 1-hour ozone standard that was revoked in 2005, many remaining 1-hour ozone plan requirements continue to apply to the SJVAB, and these must be addressed in revisions necessary for the 8-hour ozone plan. On May 6, 2014, the SJVAPCD submitted a formal request that the U.S. EPA determine that the SJVAB has attained the federal 1-hour ozone standard. This attainment designation request has not yet been acted upon, and U.S. EPA indicates that the previous classification of the SJVAB as an extreme nonattainment area under the 1-hour ozone standard and planning requirements for the 1-hour ozone standard continue to apply (U.S. EPA, 2015).

2007 8-hour Ozone Plan and Upcoming 2016 8-hr Ozone Plan

The SJVAPCD's Governing Board adopted the 2007 8-hour Ozone Plan and its amendments in 2007 and 2008, and 2011 to demonstrate attainment of the 1997 ozone standard. This SIP was approved by ARB and U.S. EPA on March 1, 2012. The approval of requirements for transportation control strategies was subsequently withdrawn by U.S. EPA on November 9, 2012 (U.S. EPA, 2015). The U.S. EPA has not established area designations for the 2015 8-hour ozone standard. The plan to address the 2008 ozone standard is under development now and due to be submitted by SJVAPCD to U.S. EPA in July 2016.

The most-recent planning forecasts for ozone precursor emissions inventories will be presented within the SJVAPCD's upcoming 2016 Ozone Plan. However, these inventories are not likely to be approved by U.S. EPA before Western makes a decision on the SLTP.

Other Attainment Plans

Other attainment demonstration or maintenance plans for pollutants in the SJVAPCD include the following plans previously adopted by the SJVAPCD's Governing Board or ARB:

- 2015 Plan for the 1997 PM_{2.5} Standard
- 2012 PM_{2.5} Plan
- 2007 PM₁₀ Maintenance Plan
- 2008 PM_{2.5} Plan
- 1996 Carbon Monoxide Redesignation Request and Maintenance Plan for Ten Federal Planning Areas

Along with being an ozone precursor, NO_x is a PM_{2.5} precursor and, accordingly, the recent PM_{2.5} planning inventories include NO_x. In Appendix B of the 2015 Plan for the 1997 PM_{2.5} Standard, the SJVAPCD adopted NO_x inventories for each calendar year including 2017, 2018, 2019, and 2020. The 2015 Plan for the 1997 PM_{2.5} Standard appears to provide the most recent NO_x inventory adopted by SJVAPCD as of the time of this General Conformity evaluation.

6. Conformity Analysis

The Draft EIS/EIR released by Western (July 2015) and Section 4 (Project Emissions) of this Draft Conformity Determination, indicate that construction-related emissions of NO_x could exceed the General Conformity rule threshold rate applicable in the SJVAB. Accordingly, the SLTP requires a General Conformity evaluation for NO_x.

6.1 Comparison of Emissions

The SJVAPCD NO_x inventory contains emission budgets for off-road equipment used in construction projects in the SJVAB. These emissions are not designated to specific projects and some are associated with projected regional growth. The emissions caused by the proposed SLTP are not specifically identified in the SIP. Additionally, the proposed SLTP emissions will not be specifically identified in the upcoming (2016) ozone plan because the SJVAPCD developed the inventory before Western commenced the General Conformity evaluation.

The portions of the NO_x inventory that are allocated to off-road equipment, on-road vehicles, and aircraft throughout the SJVAB are shown in Table M-2 (SJVAB NO_x Planning Inventory).

Table M-2. SJVAB NOx Planning Inventory (annual average, tons per day)

Mobile Source Category	2017	2018	2019	2020
Off-road Equipment Subcategory	18.1	16.9	16.1	15.9
On-Road Motor Vehicles Subcategory	118.9	110.2	104.4	96.8
Aircraft Subcategory	2.5	2.5	4.6	4.6
San Joaquin Valley Air Basin NOx Planning Inventory (subcategories above)	139.5	129.6	125.1	117.3
Agency Preferred Alternative Total NOx (average tons per day, over 525 days)	---	0.114 tons per day (average during construction)		
Agency Preferred Alternative (portion of subcategories above)	---	0.09%	0.09%	0.10%

Source: SJVAPCD 2015 Plan for the 1997 PM2.5 Standard (Table B-2).

Emissions from SLTP construction would be limited to approximately 0.1 percent of the inventory of relevant regionally budgeted source categories. However, the proposed construction emissions are not specifically accounted for in the planning inventory. Because SLTP emissions are not “specifically identified and accounted for in the SIP,” Western cannot use this method as a way of determining conformity [§93.158(a)(1)].

Because the SLTP construction emissions are not specifically identified or accounted for in the SIP budgets, and the budgets may not be revised in a manner to accommodate the SLTP, Western proposes to fully offset the construction-phase NOx emissions in order to demonstrate conformity [§93.158(a)(5)(iii)].

6.2 Offsetting Emissions

To fully offset the construction NOx emissions, Western must implement an enforceable measure that effects emissions reductions equal to or greater than the total of direct and indirect emissions from the action so that there is no net increase in NOx emissions [§93.158(a)(5)(iii)].

The emission offsets to be used for the purpose of a conformity determination [§93.158] must be: emissions reductions which are quantifiable, consistent with the applicable SIP attainment and reasonable further progress demonstrations, surplus to reductions required by, and credited to, other applicable SIP provisions, enforceable at both the State and Federal levels, and permanent within the timeframe specified by the program. [§93.152]

Options for mitigating in the form of emission offsets include:

- Surrendering traditional Emission Reduction Credits (ERCs);
- Implementing an agreement or other legally binding instrument to fund an SJVAPCD-administered emission reduction incentive program; and
- Creating surplus emission reductions through other incentive programs, such as a heavy-duty engine program like the Carl Moyer program or the Goods Movement emission reduction program.

Traditional ERCs could be held or retired to demonstrate conformity [§93.158(a)(5)(i)(A)], but this would require Western to obtain ERCs that are otherwise highly valuable for offsetting new stationary sources. Western does not propose to acquire traditional ERCs or identify a source for potentially creating ERCs because the nature and timeframe of the proposed emissions would be limited to construction activities, rather than from stationary sources. Traditional ERCs in the SJVAPCD are better suited for use in the New Source Review program for stationary sources. Western is not proposing to mitigate with ERCs.

For mitigating the types of emissions sources normally associated with construction activities such as those of the proposed SLTP, the SJVAPCD has well-established incentive grant programs. Western proposes to finance and verify off-site reductions through an SJVAPCD-administered incentive program. Mitigation will be in a quantity sufficient to fully offset construction NOx emissions, and the timing of reductions will be contemporaneous with SLTP construction activities [§93.163].

6.3 Description of NOx Reductions

Western consulted with SJVAPCD staff regarding Western's proposal to finance and verify off-site reductions through an SJVAPCD-administered incentive program. SJVAPCD staff confirmed the feasibility of achieving the offsets in a letter to Western dated February 3, 2016. The following are examples of how the SJVAPCD could use Western's funds achieve surplus NOx reductions in SJVAB to mitigate SLTP emissions:

- Grants to businesses and municipalities to replace old trucks with new low-emission trucks;
- Grants to businesses and municipalities to electrify or replace existing diesel-powered off-road equipment;
- Grants to residents to replace fireplaces and non-certified wood burning stoves with clean-burning EPA certified units;
- Grants to residents through the District's Tune-In-Tune-Up program to repair older high-polluting vehicles;
- Grants to residents to purchase cleaner vehicles; or
- Grants to school districts to replace older and high-polluting school buses.

6.4 Conformity Mitigation

The conformity mitigation for the proposed SLTP will achieve verifiable off-site emission reductions in sufficient quantities so that there is no net increase in NOx during construction. Creating 60 tons of off-site NOx reductions is a key requirement of implementing Mitigation Measure AQ-1, as defined in the Final EIS/EIR.

The Final EIS/EIR Mitigation Measure AQ-1 will ensure that the conformity mitigation is measurable and enforceable, through the following key steps:

- Prior to commencing construction, Western will finance and verify implementation of additional off-site emission reduction programs to offset SLTP construction emissions.
- Western commits to enter into an agreement or other legally binding instrument with the SJVAPCD to implement 60 tons of NOx emission reductions, as necessary for the Agency Preferred Alternative.
- The SJVAPCD may administer the emission reduction projects on the behalf of Western.
- Western may require the SJVAPCD to prepare a report demonstrating that the emission reduction projects have achieved 60 tons of successful and actual NOx reductions to demonstrate General Conformity.

The Final EIS/EIR and this Draft Conformity Determination assume that Mitigation Measure AQ-1 will be implemented. The mitigation describes Western's intent to enter into an agreement to fund off-site emission reduction projects. Because completing the offsets will require action by the SJVAPCD and its Governing Board, Western will need a commitment from SJVAPCD to implement Western's proposed

mitigation, and this commitment may be in the form of a formal agreement or other legally binding instrument.

Preliminarily, Western expects the agreement to include:

- Western's commitment to finance and verify 60 tons of NOx emissions reductions for General Conformity and for CEQA purposes, as necessary for implementation of the Agency Preferred Alternative.
- Separate from General Conformity, the agreement will also express Western's commitment to achieve 82 tons of PM10 emissions reductions for CEQA purposes, as necessary for implementation of the Agency Preferred Alternative.
- A commitment by SJVAPCD to accept payment by Western of the mitigation fee to be used for air quality benefit programs to reduce NOx and PM10 for General Conformity and for CEQA purposes, preferably in the Northern Region of the SJVAPCD, which is San Joaquin County, Stanislaus County, and Merced County.
- A commitment by SJVAPCD to demonstrate that the emission reduction projects achieve reductions that are real, surplus, quantifiable and enforceable [as emissions offsets are defined in §93.152] for the duration of SLTP construction, and a commitment by SJVAPCD to provide the demonstration to Western in a report.
- Western's commitment to pay the air quality mitigation fee to the SJVAPCD no later than five months prior to commencing construction.
- The actual amount of the mitigation fee for General Conformity and for CEQA purposes is yet to be determined. The amounts may be similar those specified in SJVAPCD Rule 9510 (Indirect Source Review): \$9,350 per ton of NOx reductions; \$9,011 per ton of PM10. The sum may include a 5 percent administration fee to cover the SJVAPCD's cost of administering the benefit programs. Accordingly, the fee for SLTP emission reductions would be approximately \$1,300,000, and the 5 percent administration fee would be approximately \$65,000; the total sum required of Western would be approximately \$1,365,000.

6.5 Implementation Schedule

The Record of Decision would contain stipulations to assure that the SLTP and the implementation of the emission reductions would meet conformity requirements for the SJVAB. Construction could not begin until Western and SJVAPCD execute an agreement to implement and verify the emission reductions, and the reductions would occur after Western pays the mitigation fee.

Guidelines for implementing General Conformity in the NEPA process (U.S. DOE, 2000) show that Western's Record of Decision (ROD) must briefly describe the conformity determination. The ROD will:

- Include the commitments to implement the mitigation measures and offsets needed to achieve conformity; and
- Reference the preparation of a NEPA mitigation action plan to implement the conformity mitigation and the offset commitments.

The ROD may be issued before Western makes a Final Conformity Determination for SLTP, but activities causing emissions may not commence without enforceable mitigation. In the event that Western has not made a Final Conformity Determination at the time of issuing the ROD for SLTP, the decision could not be

implemented (i.e., construction could not begin) until after the Final Conformity Determination and responses to public comments on this Draft Conformity Determination are issued (U.S. DOE, 2000).

The commitment to achieve verifiable off-site emission reductions must be in place before emissions from the action start. Western may make implementation of its decision contingent upon establishing a commitment by SJVAPCD to implement the conformity mitigation or upon executing an agreement to fulfill the mitigation,² after which the Final Conformity Determination could be made. As the federal lead agency under NEPA, Western is required to enforce compliance with all mitigation measures contained in the ROD.

7. Finding of Conformity

This Draft Conformity Determination finds that the ozone precursor emissions of NO_x that are subject to the conformity requirements will be fully offset by reducing emissions of the same pollutant in the same nonattainment area. To achieve this, Western will fully offset its construction-phase NO_x emissions through an enforceable measure that effects emissions reductions equal to or greater than the total of direct and indirect emissions from the action so that there is no net increase in NO_x emissions.

Prior to determining that the action is in conformity, Western must obtain a written commitment from SJVAPCD to implement off-site emission reduction projects on the behalf of Western, and the SJVAPCD must commit to demonstrating that the emission reduction projects have achieved 60 tons of successful and actual NO_x reductions, for implementation of the Agency Preferred Alternative. Upon obtaining these commitments, Western may make a positive conformity determination for the SLTP.

Responses to all comments received on this Draft Conformity Determination will be presented in the Final Conformity Determination.

8. References

CalEEMod (California Emissions Estimator Model). 2013 CalEEMod User's Guide. Appendix A and Appendix D. Version 2013.2.2. July 2013.

U.S. DOE. 2000. Clean Air Act General Conformity Requirements and the National Environmental Policy Act Process.

U.S. EPA. 2010. General Conformity Training Module. Available at: http://www3.epa.gov/airquality/genconform/training/files/General_Conformity_Training_Manual.pdf.

U.S. EPA. 2015. Status of SIP Requirements. Available at: http://www3.epa.gov/airquality/urbanair/sipstatus/reports/ca_areabypoll.html.

² 40 CFR 93.160(b) and (f); and U.S. EPA General Conformity Training Module, Section 3.5.4. (Schedule for demonstration measures). [http://www3.epa.gov/airquality/genconform/training/03_mod_3_Sec_3-5.html]